REPORT RESUMES

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THE IMPACT OF A VALUE-ORIENTED UNIVERSITY ON STUDENT ATTITUDES AND THINKING.
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THIS STUDY EXPLORED THE EFFECTS OF A DECLARED INSTITUTIONAL GOAL OF VALUE-ORIENTATION ON THE VALUES OF STUDENTS. THE OBJECTIVES WERE--(1) DETERMINE WHETHER OR NOT THE LARGE AMOUNTS OF PHILOSOPHY AND THE THEOLOGY REQUIRED IN A CATHOLIC COLLEGE HAVE AN APPRECIABLE IMPACT ON STUDENTS, (2) DETERMINE WHETHER OR NOT UNIVERSITY EXPERIENCE PRODUCES CONFORMITY OR INDIVIDUALISM IN STUDENTS, (3) INVESTIGATE THE EFFECT OF CATHOLIC EDUCATION ON LIBERAL-AUTHORITARIAN BELIEFS IN STUDENTS, AND (4) COMPARE THE DEVELOPMENT OF CRITICAL THINKING IN A CATHOLIC COLLEGE WITH NON-CATHOLIC INSTITUTIONS. THE BASIC POPULATION USED IN THE STUDY CONSISTED OF THE MALE UNDERGRADUATE STUDENTS ENROLLED IN A SMALL CATHOLIC UNIVERSITY. DATA ON THREE OTHER STUDENT POPULATIONS WERE COLLECTED FOR COMPARISON PURPOSES FROM A NEIGHBORING STATE COLLEGE, A JUNIOR COLLEGE, AND A CATHOLIC COLLEGE PREPARATORY SCHOOL. TESTS WERE ADMINISTERED AT THIS UNIVERSITY ON FOUR OCCASIONS AND ONCE ONLY AT THE OTHER INSTITUTIONS. THE CONTENTS OF THE TEST BATTERIES VARIED WITH THE REQUIREMENTS OF THE STUDY AND THE AMOUNT OF TIME AVAILABLE. A LONGITUDINAL ANALYSIS OF THE DATA WAS UNDERTAKEN. ALL STUDENTS WERE TESTED IN SEPTEMBER, 1959, AND THE SENIOR CLASS WAS RETESTED 8 MONTHS LATER, JUST BEFORE GRADUATION. THE REMAINDER OF THE STUDENTS WERE RETESTED 20 MONTHS LATER, IN MAY 1961. IT WAS CONCLUDED THAT EXPERIENCE AT A VALUE-ORIENTED UNIVERSITY DOES REDUCE DEVIATION FROM ETHICAL AND THEOLOGICAL DOCTRINES. HOWEVER, STUDENTS WHO CHOOSE SUCH A UNIVERSITY ALREADY CONFORM TO THE DESIRED NORM TO A CONSIDERABLY GREATER EXTENT THAN STUDENTS WHO DID NOT CHOOSE SUCH A UNIVERSITY. THE AREA AVAILABLE FOR IMPROVEMENT AS MEASURED HERE IS NOT, THEREFORE, GREAT. THE MOST MARKED CHANGE WAS A BROADENING OF VALUES. (JL)

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THE IMPACT OF A VALUE-ORIENTED UNIVERSITY ON STUDENT ATTITUDES AND THINKING

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THE IMPACT OF A VALUE-ORIENTED UNIVERSITY ON STUDENT ATTITUDES AND THINKING

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PREFACE

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CHAPTER I - INTRODUCTION

In recent years, much attention has been focused on the attitudes and thinking of college students, both by the public and by professional researchers. College populations have been subjected to close scrutiny, in an attempt to measure precisely what is being modified in the student, and how such change is taking place. (Barton, 1959; Dressel & Mayhew, 1954; Gilman, 1960; Jacob, 1957). A large part of this attention has been concentrated on the impact - or lack of it- which a college education has on the values of students. A rather comprehensive and much discussed review of research in this Area can discover no "significant changes in student values which can be attributed... to the character of the curriculum". (Jacob, 1957, p. 5) While jacob's book has received some searching criticism, this general conclusion has not been challenged.

It does seem that certain colleges, particularily those with small enrollments, a high academic reputation, and a predominatly liberal arts curriculum, tend to make a deeper impression on their students. (Goldsen _et al_, 1960; Newcomb, 1943) Just how they do this, however, is not clear. As Jacob has observed "This study has discovered no specific curricular pattern of general eduction, no model syllabus for a basic science course, no pedigree of instructor and no wizardry of educational method which should be patented for its impact on the values of students." (Jacob, 1957, p. 11). Therefore, whether values can be taught effectively as part of a curriculum, and if so, how this is to be done, remains an open question.

Almost all the research so far, however, has dealt with secular institutions, in which the teaching of values is not a declared institutional goal. It has yet to be demonstrated that there is any consensus amongst faculty members or administrators in such schools about what kinds of values are desirable. Some rather vague generalizations about tolerance and open mindedness might command wide agreement, and a large majority of faculty probably tend toward a liberal viewpoint on social and political questions. However, there would be much less unanimity on the question of how proper it is for a professor to attempt to convert his students to his own thinking on such matters. Further, most values in American society are either part of the Judeo-Christian tradition or have been heavily influenced by it; but American Education is strongly secular, formal instruction in religion is negligible or non-existent in most curricula, and faculty members, if they have a religious basis for their value-system, usually keep it to themselves.

Jacob points out one of the basic shortcomings of research up to the time of his survey- the lack of "adequate information concerning several types of institutions, notably Roman Catholic colleges, military academies and, with a few exceptions, Southern colleges, both Negro and white." (Jacob, 1957, p. 130). Thus very little is known about institutions in which the imparting of particular values is a prime concern and a declared goal of the educational system. This lack is surely an important one. If it is accepted that colleges should transmit certain values, and if indirect methods of doing so are as ineffective as current research suggests, then a direct approach in the teaching of formative standards is clearly a possibility to be considered. The present study of what we called a 'value-oriented university' attempts to weigh the effectiveness of a direct effort to impart, both in the classroom and through the socio-cultural forces operating on the campus, a clearcut system of moral and spiritual attitudes and values. We hope that as such, it will be found relevant to problems beyond those of the Roman Catholic system of higher education, of which this institution is a part.

Two official statements found in the university catalogue reflect the value-orientation of the University of Santa Clara. The motto states:

> "To mould men after the model of Man-God, and thus form them to serve their fellow men, their country and their God; this is the ideal and purpose of the University of Santa Clara."

A further statement has relevance beyond Santa Clara, to the 28 colleges and universities and numerous preparatory schools run by this Religious Order:

> "The Jesuit system of education aims to produce men who will possess sound judgment, high moral ideals, ability to evaluate critically, and keen social consciousness. The development of the student's character and his intellectual progress are the objectives of the Santa Clara educational system."

It goes without saying in such a context that these aims are to be achieved within the general framework of Catholic dogma and doctrines of Natural Law. It is also clear that this value-orientation dominates the image of the university in the public mind, and that it constitutes a major reason for the choice of Santa Clara by a great majority of those who are enrolled here. Ninety-four per cent of students enrolled in May, 1961, gave their religion as Roman Catholic.

In the curriculum, the value-orientation is concentrated in the courses in Philosophy and Theology. The normal requirements are 21 units of Philosophy and 16 of theology during the four years at Santa Clara. Owing to curricula pressures, majors in Engineering and the natural sciences take rather less of both subjects, and non-Catholics need take no courses in Theology. The great majority of courses in these two departments are taught by Jesuits, and there is a general homogeneity of viewpoint. Considerable attention is paid to the philosophical alternatives to Thomism, and many instructors try to offer an objective presentation of these, although the student is seldom left long in doubt about what his teacher considers to be the correct view on any question. Some courses, however, such as those in Metaphysics and philosophy of man taken in the junior year, and in Ethics, taken in the senior year, are devoted almost entirely to the explanation and justification of the Thomistic position. The Theology department, which is entirely staffed by Jesuits, devotes little attention to the alternatives (Christian or otherwise) to the Catholic position.

In other departments, the value-orientation of the university is far less conspicuous. Most of the teaching is done by laymen; the 1961 catalogue lists 23 Jesuits and 88 laymen who teach undergraduate courses. Many of the laymen are noncatholics, and most of them have some noncatholic academic background. Only twelve of the laymen took their highest degree at a Catholic university, while 76 attended some other type of institution. Of the 38 laymen with doctorates, only three obtained them at Catholic universities. Only nine Jesuits taught courses other than Philosophy or Theology, and none was chairman of his department.

The faculty handbook states that:

> "All members of the Faculty are expected to promote the objectives of the University and to teach nothing contrary to Catholic doctrine.."

but this does not seem to have a very restrictive effect. Certainly it does not mean that other doctrines cannot be explained in an objective way. Catholic doctrines generally do not include assertions on empirical matters, and the main business of historians, natural and social scientists, engineers, and so on is with the accurate description and analysis of phenomena. In each such area there may be Catholic interpretations or points of view, but the faculty feel under no obligation to stress such aspects of their subjects, and the majority prefer not to do so. Most of the courses other than those in Philosophy and Theology are taught as they would be at a secular institution.

Many of the faculty would claim that academic freedom and integrity is more secure at Santa Clara than at numerous other institutions. The University is not governed by a politically minded board of regents, nor is it responsible to a state legislature. In a recent instance, two faculty members were mentioned by a witness before the House UNAmerican Activities Subcommittee; contrary to some outsiders' expectations, no action was taken against them, and Santa Clara was the only one of the various universities similarily placed to issue an official statement, to the effect that judgment should be reserved until proper evidence has been adduced. The Alumni Association does not devote itself to promoting athleticism above scholarship. The Crosscurrents Club exists to bring controversial speakers to the campus, and these have included a socialist, an Episcopelian minister, a Buddhist priest, pacifists, right-wingers, and various advocates of racial integration. There are, of course, some limitations. Probably no one will ever be invited to the campus to speak for "Planned Parenthood" or to attack directly any doctrine of the Church; nor would a faculty member who consistently expressed in the classroom anything stronger than purely personal doubts and differences about some doctrines expect to retain his position.

From the student point of view, however, the atmosphere of the campus is somewhat less permissive. The socio-cultural milieu of student life forms an important ingredient in the value-oriented nature of the university. The Dean of Students is a priest, and those responsible for the counseling of students are often priests and almost always Catholic. 67 per cent of the students live in dormitories, each with its Jesuit prefect, on a campus which has the Mission Church at its physical center. Student criticism of the administration has been discouraged, and student government is generally non-political. The student publications are subjected to much paternal guidance; it would be difficult to find an issue which did not make the orientation of the school very clear. The student body traditionally takes pride in its homogeneity. It should not be concluded that pressures toward conformity are irresistible, or that the noncatholic minority is subject to social discrimination; to one familiar with the campus, either suggestion would seem very implausible. Nevertheless, the environment is a Catholic one, and in the thinking of those who know the University best, it plays a considerable part in producing whatever impact the institution has.

So much, then, for the value-oriented character of this institution, which sets it apart from those at which most research on the impact of education has been done. We turn now to the major objectives of the present study. In selecting them, the research group was attempting to provide some data relevant to the problems most frequently raised concerning an institution of this kind. The three main questions:

1. To what extent is this value-oriented university successful in inculcating its students with its chosen doctrines?
2. To what extent are the desired changes achieved at the cost of changing other attitudes in ways which may be less desired?
3. To what extent is the university successful in gaining its 'non-value-oriented' goals? Is inculcation with a particular viewpoint incompatible with producing the "ability to evaluate critically" and the "development of ... intellectual progress" for which the catalogue calls?

CHAPTER II

REVIEW OF LITERATURE, FORMULATION OF HYPOTHESES, AND CHOICE OF MEASURES

The structure of any research project is conditioned by work previously done in the area. Much has been published in recent years about the impact of college and what students think; but almost all research has dealt with non-denominational schools. The central feature of this research, which distinguishes it from previous studies is that it was undertaken in a Catholic institution. Therefore, it is appropriate to begin the review of literature with a survey of studies dealing with Roman Catholic schools.

The only text which deals exclusively with the problem of the effect of a Catholic college on those who attended it concerns St. Scholastica (Duluth, Minn., 1947). Most of the faculty of this small woman's college were involved in constructing a 684 item questionnaire, which was mailed to all available graduates of the college. No established measures were incorporated. Questions were treated individually but were grouped into seven areas, e.g., "Religious Beliefs and Activities", "Family and Home Relations" and "Physical and Mental Health". No scales were developed, nor was any statistical analysis involved. Seventy-four per cent of the questionnaires were returned and 66 per cent of the respondents identified themselves, although this was not requested. The findings, generally, were flattering to the college. For example, questioned about the value of a religion course, 82 per cent said that it had aided them in the practice of their faith and only 2 per cent responded in any negative sense. Many of the questions had very obvious "right" answers from the Catholic viewpoint, e.g., "Does Natural Law spoil you fun?" No (80 per cent) Yes (1 per cent). One may wonder how many of those who might tend to give "incorrect" answers returned their questionnaires.

Very little other work has been undertaken in connection with a Catholic university. One survey made at the time of the Spanish Civil War sampled changing student attitudes at three campuses, including the Catholic University of America (Newcomb, 1946). A survey of faculty members at church-related colleges included questions about the effectiveness of their own education at denominational institutions (Espy, 1951). Eddy (1959) included two Catholic colleges in the twenty on which his study is based. Most of his reporting is generalized, and little attention is focussed on the distinctive character of these two institutions. A survey of attitudes and personality traits at various campuses, including a number of Catholic ones, is now in process at the Center for the Study of Higher Education at Berkeley, California. It would seem, then, from these few studies that very little published research has been done concerning the impact of Catholic institutions of higher learning upon student intellectual characteristics and belief pattern.

Rattigan (1952) suggests some reasons for this lack of research. Secular schools have found the need for a unified educational system a pressing and persistent problem. The Harvard Report of 1945 relating to the search for unity in higher education states that, "Sectarian, particularly Roman Catholic, colleges have of course their solution which was generally shared by American colleges until less than a century ago; namely, the conviction that Christianity gives meaning and ultimate unity to all parts of the curriculum, indeed to the whole life of the college." (General Education in a Free Society, 1945 p. 39).

Rattigan suggests this unity in Roman Catholic colleges stems from an agreement about the nature and destiny of man, and finds expression in Philosophy and Theology courses. Such courses are often referred to as the core of their curriculum. This integration contrasts sharply with the electivism which has been adopted in most secular institutions. The author suggests that since Catholic schools have been more confident about their over-all purposes, they have not felt the need for the self examination and experimentation which have stimulated the work done at secular institutions.

Some other possible reasons for the scarcity of work on Catholic higher education may be suggested. It is probably true that research activities in general have not been encouraged or stimulated by the leaders of Catholic universities in any way comparable to secular schools. This lack is conspicuous in many fields, not only in educational research. Further, it is possible that the Catholic tradition has not emphasized or strongly supported empirical approaches to educational problems. With so few studies in this area, the present research group faced a wide choice of alternatives. A great many hypotheses suggested themselves as interesting and worthy of investigation. The remainder of this chapter will present those hypotheses which were selected for study.*

With each hypothesis, the relevant literature will be reviewed. As has been said, very little of this deals directly with a Catholic university. Two kinds of inquiry appear to be in point. One concerns students in general. It would be unrealistic to expect that Catholic students will not resemble non-Catholic ones in many ways. Studies dealing with the particular attitude or belief of college students will be discussed, with special attention to those which measure the impact of the university experience. The second kind of inquiry which is relevant concerns Catholics, whether students or not. The subjects of this research might be regarded as parts of two larger wholes--American students and American Catholics. They are in touch with the Catholic tradition in the classroom, on the campus, in their homes and in their social life. Information about Catholicism and the Catholic society is therefore in some way information about them.

In each case, one or more measures were chosen for testing the hypothesis. The choice was guided by the available literature, indicating to what extent each test had been proven valid and reliable and what kinds of comparative data would be available. More mechanical considerations, like length and scoring procedure were also involved, but it will be convenient to discuss the choice of tests along with the review of literature. For some of the hypotheses, we were driven to construct a questionnaire of our own; the general need for and nature of its scales will be indicated in this chapter, but discussion of their precise nature, construction and validity can be found in Chapter III of this report.

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*Some of the hypotheses deal with a "value-oriented" university, others with a specifically Catholic one. In some respects, all value-oriented institutions, whether Catholic or not, are alike. In these cases, we hope that our findings might be relevant to all types of value-oriented education.

HYPOTHESIS I: THE IMPACT OF A VALUE-ORIENTED UNIVERSITY UPON STUDENTS IS GREATER THAN THAT OF A SECULAR ONE.

One study of the extent to which children's value judgments correlated with those of their parents, friends and teachers is reported by Green (1960,p.491). The resulting correlations were: with parents, .55; with friends .35; and with teachers, .03. It does not, of course, follow from these findings that a similar role is played by college teachers. The considerable amount of work which has been done suggests that the power of college to change student beliefs and attitudes may be different in both extent and kind from what many educators have believed or hoped that it was.

An early study with 234 freshmen and 78 upper-classmen at the University of Buffalo concluded that, "The most significant general educational implication is the slight effect that a college training has had on the real opinions of our students..." (Jones, 1926). Thirty years and many research projects later, a rather similar conclusion is drawn by Jacob:

> College does make a difference--but not a very fundamental one for most students. Basic values remain largely constant through college. The changes which do occur bring greater consistency into the value patterns of the students and fit these patterns to a well-established standard of what a college graduate in American society is expected to believe and do... College socializes, but does not really liberalize the student. (Jacob, 1957, p. 38.)

During the thirties, most researchers reported a movement towards greater political and economic liberalism. However, during the same period, Whitely (1938), administering the Allport--Vernon Study of Values annually at Franklin found "a high degree of constancy... in no instance is the change from one year to another pronounced." The consensus seems to be that the college, by providing new information, presenting new arguments, may change the students' views on certain questions, but that there is little evidence that it will have an effect on his personality.

> The changes which have been observed--moving students towards a greater uniformity and at the same time somewhat more flexibility of social outlook--are mainly changes on the surface of personality. They do not really involve the fundamental values which shape a students' life pattern. (Jacob, 1957, p. 53.)

What exactly constitutes such a fundamental value may not be entirely clear--performance on authoritarian personality measures, for example, seems to be affected by the college experience. Sanford (1956) has discussed a number of other changes--but in general terms it seems to be clear that the college experience has few permanent effects.

The general pattern of research also suggests that those changes which are made by college are due more to the environment, the socializing forces on the campus, than to formal instruction. Jacob (1957) finds, "little evidence that the values of students change consistently as a result of the particular type of educational program in which they are enrolled or of the field of study in which they major" (p. 58). He comments that, "the person of the instructor is on the way out at many institutions" (p. 78) and that "attitudes and value judgments are relatively unaffected by the manner in which students are taught." (p. 89). A few, small liberal arts colleges, catering to students who can afford high fees, often restricted to women seem to have a greater effect on those who attend them than do more "run-of-the-mill" establishments. Just why or how this is achieved is unclear; but the signs are that again it is the milieu of the campus, rather than value-oriented instruction which is responsible.

Catholic schools, as has been said, have engaged in little research concerning their own impact on students. They do not publish results of experiments with teaching methods or curriculum, and they continue to depend on philosophy and theology to set the tone for the whole college experience. The results of this policy forms the subject of our research. But it can be said at the outset that if in fact a university like Santa Clara does achieve a considerable effect through its Philosophy and Theology courses, then it belongs in the select list of what Jacob calls "colleges of peculiar potency" and its classroom impact approaches uniqueness.

HYPOTHESIS II: EXPERIENCE AT A VALUE-ORIENTED UNIVERSITY TENDS TO CHANGE STUDENT BELIEFS IN THE DESIRED DIRECTION.

A number of studies have been made on the impact of college on the religious beliefs of students. Jones (1938) detected a decline in religiosity by comparing the performance of freshmen and seniors on three scales by Thurstone. The critical ratios, all in the direction of a decline in religiosity, were 3.29 on the Attitude toward the Church scale, 4.65 on the Religion as an Influence on Conduct scale, and 4.94 on the Reality of God scale. However, Thurstone and Chave (1931), used the same instruments at the University of Chicago and found no significant changes, Gilliland (1940), after administering the same scales to a large student group at Northwestern University, concluded that, "There is little change in attitude toward God or the Church during the four years in college or university" (p. 17). Arsenian (1943) presented data which seems to indicate that religious beliefs may increase in college; seniors at a men's college in Massachusetts were asked how their attitudes to religion had changed during the past four years. Sixty-six per cent said they had become more favorable, while only 12 per cent said less favorable. A subsequent question indicated that students thought this change was largely due to the influence of professors in courses.

These apparently contradictory findings are further illuminated by some later studies. Jacob (1957) comments that:

> Students normally express a need for religion as part of their lives and make time on most weekends for an hour in church. But there is a 'ghostly quality' about

> the beliefs and practices of many of them... Their religion does not carry over to guide and govern important decisions in the secular world.(p. 2).

The cornell study throws further light on this "ghostly quality": "The tendency on the campuses is not away from religion, but toward, perhaps, a view of God and religion that is relativistic rather than absolute, personal rather than dogmatic" (Suchman, 1957, p. 118). The book which eventuated from this study of eleven campuses has a chapter entitled "Secular Religion" in which the authors report that,

> "About 80 per cent said they felt a need for religion; but 46 per cent meant 'some sincere working philosophy or code of ethics, not necessarily a religious belief'" (Goldsen et al,1960, p. 161).

Eddy (1959) generally corroborates these findings. He did not find the college student to be anti-religious. He would rather term it,

> ...a suspension of consideration and a questioning of the traditional approaches to religious beliefs. Students, of all faiths as well as those with no fixed beliefs, told us again and again that they were uninspired by the usual pattern of religious activity (p. 116).

Eddy suggests that to many students, "religion is purely and simply absolutism" and that they, "react against absolutism in any form" (p. 117). He notes that students have the inclination to accept group standards as criteria rather than the individually held values which most religions emphasize.

Little has been done to find out to what extent these conclusions are applicable to denominational schools. Two recent surveys make mildly pessimistic observations about the success of such institutions in inculcating their students with traditional religious values. According to Eddy,

> With the exception of some students in the strongly church-centered institutions,...religion to many college students appears to have little direct relationship to higher learning. And even the church-centered institution must struggle mightily against external pressures on the student...The practically-minded student, living in a pragmatic world, views religion in the main as a mysterious abstraction--something vaguely attractive but not well understood (1959, p. 115).

Jacob comments that,

> Denominational colleges seem to have little positive effect on students' religious views. Of several hundred teachers at church-related colleges, few could recall that their own religious development had been appreciably affected by college experience, whether or not it had included compulsory chapel, required courses in religion and Bible and other features common to institutions with a strong religious commitment. (pp. 112-113)

But neither of these authors devote much attention to the definition of 'church-related' or 'denominational' colleges, nor to classifying them according to the importance of this value orientation. Nor is the data in either case of a particularly satisfactory kind. While the above observations may be valid in a general way, there is clearly a need for more specific information.

No one familiar with the Santa Clara campus would doubt that religion to most of the students means something far more clear cut than this 'sincere working philosophy'. Few practicing Catholics would accept such a definition of religion as proper. The five-item Religiousness Scale, developed by the Cornell group, was designed to test such attitudes; the present research group decided that it might have limited relevance to this campus. Levinson (1954) has developed a Religous Conventionalism Scale, designed to distinguish those who emphasize faith, tradition and absolute moral authority from those who are humanistic, non-theistic and rationalistic; again, it was believed that such a measure might be unrevealing in this environment. Catholics are usually reported as scoring high on the Thurstone attitude scales toward religion (see Telford, 1950) which are designed primarily for use with groups less firm in their formal religious affiliation. Dunkel (1947, p. 80) reports that the Inventory of Religious concepts, developed in the course of the Cooperative Study of General Education was not very useful when applies to Catholics. For these reasons, none of the established measures of religious belief seemed to lend themselves to purposes of this research, and the research group decided to construct a measure of the extent to which students understood and accepted the doctrines of the Catholic Church.

Various approaches offered themselves. First, it had to be decided whether to ask students about what they believed to be right, or about what they would do. For example, one could offer either of the following agree-disagree statements:

a. "To tell a lie can never be right, under any circumstances."
b. "I would never tell a lie under any circumstances."

From the university's point of view, strong agreement to both propositions would be the desired response, and to the extent to which students rejected either or both, the objectives of education here would have gone unfulfilled. However, the second kind of statement, which deals with choices of action, seemed to the research group to be open to certain vital objections. Questions about personal conduct are objectionable to many, in a way in which questions about belief are not. The temptation of insincerity appears to be greater in such cases, and the fear of reprisals (even though anonymity be promised) might sway responses to an unknown extent. It is doubtful whether this type of question can yield satisfactory results unless it is accompanied by interviews or some such technique, which would be beyond the scope of the present study. For these reasons, it was decided to limit all questions to the subject of attitudes and beliefs, and to exclude questions about actual or intended behavior.

Catholic doctrine involves propositions in the realms of theology, metaphysics and ethics. It might be argued that a measure of adherence to Catholic doctrine should cover all these fields, though in what proportions it would be difficult to determine. However, the research group was interested principally in those attitudes which would most directly affect the individual's life in society, rather than in those relating to his spiritual welfare. It was also desired that comparison could be made with groups of Catholics who had not received their education in a catholic institution, and with groups of non-Catholics. For these reasons, attention was focussed on ethical subjects, and any questions which might deal with problems of metaphysics or theology not comprehensible to the average college student were excluded. The greater part of the scale developed, therefore, dealt with ethical principles and alternatives.

A tendency toward non-conformity with the doctrines of the Church we called "Deviation". Two kinds of deviation were distinguished in our study. Broad deviation consists in general in taking a laxer view than that approved by the Church, narrow deviation in taking a stricter view. In particular, broad deviation is the acceptance of a theoretical position or the approval of a course of conduct that the Church has either condemned or disapproved of or at least considered improper for a Catholic; and narrow deviation is the condemning of the theoretical position or the disapproval of a course of conduct as inconsistent with Catholicism when the Church has either not condemned or not forbidden or not disapproved of it.

Of the two, broad deviation is, from the Church's standpoint, the more serious since it indicates less interest in--and less good will toward--religion and toward the Church as the Catholic's chief interpreter of religion, showing an abundance of good will but insufficient instruction or too literal and unintelligent compliance. Broad deviationists tend to transgress the Church's precepts, at least objectively, whereas narrow deviationists fulfill all that the Church prescribes and then some. Many of the views that the narrow deviationists condemn, the Church does not necessarily approve, but only tolerates, and so there is not always a discrepancy of opinion but only of strength with which the opinion is urged. Since the purpose of a Catholic university is to produce informed and intelligent Catholics, narrow deviationists do the Church a disservice by their ignorance or misunderstanding or lack of intelligent interpretation of the Church's positions. Broad deviationists are failures both as Catholics and as intelligent Catholics, narrow deviations may be excellent Catholics, but are failures as intelligent Catholics. Details of the scales, their development and validation, are given in the following chapter.

HYPOTHESIS III: A VALUE-ORIENTED UNIVERSITY PRODUCES AN INCREASE IN CRITICAL THINKING ABILITY AS EFFECTIVELY AS OTHER INSTITUTIONS.

It has been a commonplace since at least the time of Plato that a prime purpose of education is to teach men to think. The absorbtion of facts by rote memory may sometimes be necessary, but it will usually be defended as an essential preliminary to the business of training the mind. No one with a serious concern for education suggests that memorization constitutes true learning, and there is a consensus in favor of "real understanding", "training the reason" and so on. The official description of the Jesuit system of education gives "sound judgment...the ability to evaluate critically" as the proper goals of the system, along with other aims of a value-oriented nature. Yet, despite so much verbal agreement, there is perhaps a certain ambiguity about what exactly is meant by these various terms. Many teachers can accept them as worthy goals for their profession, without having any very clear idea about how they can be attained.

An outward sign of this lack of clarity is the variety of examinations which are supposed to measure the success of teaching. Until recent times, most such tests confined themselves to specific fields of study. Oftentimes the emphasis was placed solely on factual knowledge. A perusal of one of the most comprehensive surveys of psychological tests (Buros, 1953) revealed no published tests of critical thinking available for college populations as of that date. Since then, attempts have been made to develop measures which are divorced from specific subject matter, and which can measure the increase in the student's capacity to "evaluate critically'. A test of critical thinking, therefore, seems best as a measure of the over-all success of the university in this area, an area in which all universities, irrespective of their value orientation or lack of it, must have an interest.

Johnson (1952) suggests that critical thinking consists of:

1. Facing decisions, attitudes and behavior, or known facts or the best informed opinion.
2. Knowing where and how to get pertinent information, and
3. Knowing how to apply all acquired and relevant factors to the problem or issue at hand.

Dressel and Mayhew (1953), while admitting that other aspects of critical thinking exist, stress the problem-solving nature:

1. Ability to define problems.
2. Ability to select pertinent information.
3. Ability to recognize unstated assumptions.
4. Ability to invent and evaluate hypotheses.
5. Ability to make valid inferences and to judge the validity of inferences.

These abilities are the ones which the American Council on Education Test of Critical Thinking, Form G, was designed to measure. It was decided to use this test, instead of the only alternative, the Watson-Glazer Critical Thinking Appraisal (1952), primarily because of the more extensive use which has been made of Form G with college students.

The committee which drew up the Test of Critical Thinking, Form G, included psychologists, mathematicians, logicians and evaluation experts. The items included in Form G represent the best from a series of three experimental forms, selected on the basis of the following factors: 1) optimum length of the test, 2) item analysis, 3) student interest in the problems presented, 4) familiarity of students with the vocabulary involved, 5) level of information assumed in the items, and 6) face validity. Dressel and Mayhew report adjusted split-halves coefficients of .84 for 97 cases and .79 for 231 cases. These results, while lower than expected, were regarded as satisfactory. They also report high powers of discrimination for the items. Scores on Form G were correlated with scores on related measures of ability, with results ranging from .38 to .71. Performance on Form G was also correlated with ratings of teachers, counsellors, peers and the subjects themselves; the results here range from .42 to .66. The validity of Form G is discussed at length in Dressel & Mayhew, 1954, pp. 190-207.

Form G consists of 52 objective, multiple-choice items, each with one correct answer. The individual receives one mark for each correct answer, and the possible range of scores is therefore zero to 52. The test is self-administering, takes approximately 50 minutes, and can be scored by IBM process.

Little empirical work has been done to determine the relative efficiency of a value-oriented university in producing critical thinking ability. Some critics of the system suggest that the impact is likely to be rather in the direction of dogmatism and an uncritical approach. Nevertheless, philosophy, which par excellence is the discipline concerned with this ability (though all departments should, of course, contribute to it) is particularly stressed at this university. All freshmen, for example, take a course in Logic, described in the catalogue as:

> An introductory course in the science of correct thinking, comprising both deductive and inductive inference, and scientific method. Exercises in the various forms of logical inference and in the detection of fallacies.

It would seem, therefore, that a test such as Form G would be a fair measure of the success of this university in attaining one of its chosen goals.

HYPOTHESIS IV: A VALUE-ORIENTED UNIVERSITY PRODUCES ABILITY TO THINK CRITICALLY ON ETHICAL QUESTIONS MORE EFFECTIVELY THAN OTHER INSTITUTIONS.

What has been said about the outcomes of education in general must surely apply also to value-oriented education; that is, while memorization must play some part in such training, the real aim must be to produce an ability to think critically and to solve problems effectively. This aim is in tune with Catholic doctrine, which insists that man can reach much of the truth in the normative realm by use of his reason, and presents ethical judgments as parts of a very complex system of objectively knowable propositions. It was decided, therefore, that a test of critical thinking in ethics should be employed.

One test has already been developed which measures the skill and perceptiveness of respondents' moral judgments. The Shields Moral Judgment test (Lincoln and Shields, 1931) was based on conventional morality and the generally accepted social and legal standards of American society. No attempt was made to deal with fine philosophical distinctions; rather the intent was to discover to what extent any individual comprehended definitions of moral terms, and could resolve moral problems in the "right" way. Different forms of this test were designed for use with various age groups between six and twenty years.

Employing this instrument, Barkley (1942) tested 79 commercial students and 155 liberal arts freshmen about a month after the start of the fall semester. All the commercial students and 95 of the liberal arts majors were retested in the spring, while the remaining 60 liberal arts students were retested at the end of each of their subsequent years in college. The Carnegie Mental Ability Test, the Thurstone Personality Test (Clark revision), and the Thurstone Attitude scales towards Law, the Church and the Reality of God were also given to some of the groups studied by Barkley. It was found that the liberal arts students scored better on the Shields Moral Judgment Test at the beginning of the study than did the commercial students (critical ratio: 3.08) and that they improved to a statistically significant extent during their first year, whereas the commercial students did not. This improvement continued throughout all their years of college. The author attributes these changes to the influences of the curriculum. Moral Judgment was found to correlate with intelligence .509 but negatively with all the other tests used, none of the correlations exceeding +.04. Data on the religion of the students involved was not presented, but it is interesting that Catholics have been reported elsewhere as scoring high on the Thurstone Attitude Towards the Church and Reality of God scales, and that a high score on these measures was found to be associated with a low one on the Moral Judgment scale.

The Shields Moral Judgment Test is based on conventional morality, which may be different from Catholic doctrines. It explicity avoids measuring the kind of fine distinctions which are emphasized in courses in Catholic philosophy. Further, it has not been used extensively or recently with college populations. It was, therefore, decided that it was not suitable for use in the present study, and instead the research group developed a new measure.

This new measure could not confine itself to an examination of Catholic ethical principles since it would test mainly memorization and it would be possible to gain a low score as much by being a non-conformist as by being ignorant or illogical. Many textbooks in ethics use the device of hypothetical cases, and it might have been possible to develop a test similar to Form G, but with ethical content. However, it was decided that a more effective measure could be developed which would yield an inconsistency score. Such a measure would allow persons of contrasting ethical views to be tested with the same instrument. Those who reject a particular doctrine would not be penalized since all that would be required for a perfect score would be to avoid agreeing with conflicting propositions. This kind of inconsistency also has something in common with authoritarianism. Definitions of authoritarianism have included such traits as "Irrational acceptance of external authority" (Dressel & Mayhew, 1954) and "Tolerance of conflicts within the belief system" (Rokeach, 1960). But these traits are joined in such studies with many others, and for present purposes it seemed desirable to attempt to isolate inconsistency in thinking about values and attitudes. To measure this, an inconsistency scale was developed. The content and validity of this scale will be discussed in the next chapter.

HYPOTHESIS V: STRESS ON VALUES TENDS TO PRODUCE AN INABILITY TO HANDLE FACTUAL PROPOSITIONS RELATING TO THESE VALUES.

The precise nature of the link between opinions, knowledge and personality structure has yet to be discovered. Certainly there is no need to accept the extreme position, which holds that all attitudes and opinions are to be interpreted in terms of personality needs, and that rational thought can be nothing more than rationalization of a conclusion already reached. Opinions can be, and often are, based on available knowledge, but it also possible that a person may arrive at what he considers to be knowledge by allowing his opinions to lead him toward comfortable stereotypes and misperceptions.

Mc Closky (1958) writes that:

> A process by which cognitions of the external world may be structured (is) through projection of the personality of the observer himself. In this way, an individual creates a set of perceptions that express, or are consonant with, his own needs and impulses. The more ambiguous the thing observed, the greater the likelihood that he will fashion his perceptions of it to accord with his own inner feelings. In other words (they) believe what they do not because the world is the way it is but because they, the observers, are the way *they* are. (p. 40)

The group described by McClosky is conservative, but these comments could apply to many other groups including, perhaps, Catholics. It therefore seemed desirable to test whether students at this university seemed to misperceive facts relevant to the value-orientation of the institution. A tendency to do so was given the name of 'Moralistic Perception'.

Pace (1939) found some small correlation between liberalism and level of information, but the correlation is not very significant, and no effort was made to show the nature of this relationship. Newcomb (1946) found no correlations between attitudes to the Spanish Civil War, levels and types of information about it, and the orientation of the school on this issue. Adorno *et al* (1950) in developing the F scale placed great stress on the psychological determinants of attitude and included in their measures some items which come near to being plain mis-statements of fact. In their description of the high scorers' characteristics they include "Belief in superstition, in mystical determinants of the individual's fate; tendency to think in stereotypes, rigid categories" (p. 228). These characteristics may be related to what is meant by moralistic perception. McClosky (1958) finds such characteristics as rigidity, lack of intellectuality, lack of awareness, distrust of intellectuals and of the scientific method to be associated with the group he is studying (*cf. supra*). He concludes that for a certain kind of conservative, the world is not seen as it is, but through the distorting "lenses" of attitudes, which are the product of personality needs. Rokeach (1960), in defining his "Dogmatic Man", stresses their anti-intellectuality, their anti-rational approach to science, their adherence to outmoded ideas, and reliance on stereotypes and superstitions.

It was beyond the scope of the present study to inquire into the personality structures of the students at this institution. We hope only to show whether experience here seems to develop or to restrain these tendencies toward distortion. Any measure must be suited to the group with which it is to be used, and so it seemed desirable to construct a scale which would give particular opportunities for value-oriented respondents to demonstrate their distortions or the lack of them. The construction and validity of this scale is dealt with in the next chapter.

HYPOTHESIS VI: STUDENTS AT A VALUE-ORIENTED UNIVERSITY BECOME LESS AUTHORITARIAN, LESS DOGMATIC.

The most important published research involving college impact on what has been called the "Authoritarian Personality" has been done by Dressel and Mayhew (1954). Using the Inventory of Beliefs, they tested students at thirteen colleges and retested them one year later. Although the colleges were unnamed it would appear that more was Roman Catholic. In all but two of the thirteen colleges, they found a decrease in authoritarianism. In no instance was there a significant gain; and in two cases the retest mean was 15 per cent lower than the first mean. They found that the most marked change occurred in what were originally the most authoritarian students.

Freshmen groups at two colleges were subjected to a longitudinal study. The Inventory was administered first in the fall of 1951, in the spring of 1952, and again in the spring of 1953. It was found that while authoritarianism decreased each year, the change during the freshman year at each college was more than three times greater than that during the sophomore year (Dressel & Mayhew, 1954, pp.226-230).

Further confirmation of the hypothesis that education tends to decrease authoritarianism may be found in comparisons of college groups with groups of less educated ones. Adorno et al (1950, p. 266) give F scale means for various groups. Exact data on education were not reported, but San Quentin inmates and working class men score highest (most authoritarian) while college groups and professional women are among the lowest scoring respondents. Rokeach (1960, p. 90) reports means for various groups on the Dogmatism scale. English workers and an "aged, destitute veteran" group score significantly higher than various college groups. Since it is possible that intelligence correlates with non-authoritarianism, these relationships may be due only to the native ability of the groups involved. However, it seems quite probable that education may play some part in the differences noted.

While education appears to decrease authoritarianism, Catholicism is associated with authoritarian scores. Adorno et al (1950) express this linkage only in a most indirect way. Religious affiliation and observance is correlated with ethnocentrism, and ethnocentrism with authoritarianism. On measures of religious observance, Catholics normally score very high. Dressel & Mayhew (1954, p. 225) report that "the low (authoritarian) scorers... (are) more likely to be associated with orthodox or fundamentalist groups than are the high scorers." Rokeach (1960, p. 112) reports that Catholics score higher on the F scale than Protestants, Jews and unbelievers, and higher than Protestants and Jews on the Dogmatism scale. Lehmann & Ikenberry (1959) report--more authoritarian means for Catholics than for Protestants, Jews or non-believers on the Inventory of Beliefs and Dogmatism scales.

The nature of the relationship between Catholicism and authoritarianism is not a simple one. Rokeach claims that the high scores of Catholics on the scale is evidence of its validity:

> "These findings provide the strongest evidence that we have been able to obtain thus far indicating that the Dogmatism and Opinionation Scales are measuring something relatively independent of ideological content. We infer this 'something' to be

> general authoritarianism and general intolerance... The groups that score high on these scales may be reasonably expected to do so. It is well known that there exist certain institutionalized, hierarchically organized groups--among them the Catholic Church and the Communist party-- which require of their members strict adherence to doctrine. Whether a person becomes a member of such a group by birth or by joining it later, once he is a member he is subject to its social pressures of reward and punishment. These pressures are meant to coerce him to commit himself in advance to the group's ideology and to reject in advance alternative ideologies." (pp. 117-118)

Thus to Rokeach, it would seem, an authoritarianism scale on which Catholics did not score more highly than others would be suspect. Some of the items included in the scales are such that it would be difficult for Catholics to reject them:

> "Sexual relations between brother and sister are contrary to natural law" (Inventory of Beliefs).
> "Of all the different philosophies in this world, there is probably only one which is correct" (Dogmatism Scale).

So far, there has been little attempt to distinguish the certainty based on reason and faith, which the Catholic Church would wish to promote, from the intolerance which is linked to narrowness of mind, ignorance, aggression, hostility and paranoid tendencies. Whether such a distinction can and should be made, and if so, how, is a complex problem, and beyond the scope of this study. For present purposes, it is sufficient to point out that the relationship between Catholic education and authoritarianism must surely be an ambivalent one. Catholic institutions seek to promote sound judgment and critical ability, but at the same time to reinforce the faith of individuals in their religion.

Of three measures of authoritarianism discussed, the Dogmatism Scale was selected for widest use in this study. This test possesses certain advantages over the F Scale, notably that it seeks to measure authoritarianism of all kinds, while the F Scale concentrates on "authoritarianism of the Right". The forty -item edition of the scale was used (Rokeach, 1960, pp. 73-80). To each statement, three degrees of agreement and disagreement are possible with respect to each statement, with a per item scoring range of one to seven, four points being given for a blank answer.

The final forty-item scale, Form D, had a corrected reliability of .81 for a group of English college students and .78 for a group of English workers. In other populations tested at Michigan State University, Ohio State University, and a group of veterans living in a New York Veterans Administration domiciliary, the reliabilities ranged from .68 to .93. Rokeach reports that:

> These reliabilities are considered to be quite satisfactory, especially when we remember that the dogmatism scale contains quite a strange collection of items that cover a lot of territory and appear on the surface to be unrelated to each other.

> The fact that subjects agree or disagree with these items in a consistent manner is borne out by the item analyses. These analyses compare subjects scoring in the upper and lower quarters of the frequency distribution (which is leptokurtic) on each of the items. They typically show that high and low dogmatic subjects differ consistently and in a statistically significant manner on the great majority of items. (Rokeach, 1960, p. 90)

Rokeach presents further evidence supporting the validity of the scale. He finds that dogmatic groups--Catholics and Communists, particularly--scored higher than others. Two groups, selected by psychology graduate students as high and low in dogmatism were tested, and it was found that the mean of the high group was about 55 points above that of the low group. However, a similar experiment involving ratings by professors failed to produce two groups who differed on their Dogmatism Scale performance. Scores on the Dogmatism Scale were correlated with scores on the F Scale for student groups in Michigan, New York, and England, with positive results ranging from .54 to .77.

Since the relationship between Catholicism and authoritarianism is both interesting and complex, a second measure was employed in the study, though it was not administered in all batteries. A 30 item edition of the California F Scale, modified from the original by Gough, was used. This instrument went through a number of forms during the California study, for which reliabilities ranged from .74 to .91. It has been discussed so thoroughly (cf. Christie & Cook, 1958) that further description here seems superfluous.

It should be noted that the purposes of the two scales are described by their authors in somewhat different terms. Adorno et al (1950, p. 228) list the following as characteristics of the authoritarian personality:

1. Rigid adherence to conventional, middle class values.
2. Submissiveness to and hero-worship of, accepted group leaders.
3. Tendency to be on the look out for, to condemn, reject and punish people who violate conventional values.
4. Dislike of anything subjective, imaginative, or tenderminded.
5. Belief in superstition, in mystical determinants of the individual's fate. Tendency to think in stereotypes, rigid categories.
6. Preoccupation with power and toughness.
7. General hostility, destructiveness and cynicism about humanity.
8. A belief that wild and dangerous things go on in the world.
9. An exaggerated concern with sexual "goings-on".

Rokeach analyzes authoritarianism in the following terms:

1. The authoritarian emphasizes the difference between his own group and all others, at the same time tending to lump all others together, and failing to perceive differences which exist amongst those with whom he disagrees.
2. He values loyalty to the group highly, and expects people only to be able to understand beliefs which they themselves hold. He is very ready to say that those who are arguing with him are being irrelevant.

3. He tends to avoid people, books and newspapers that disagree with him. He avoids facts which are incongruent with his belief system.
4. He tolerates contradictions within his own belief system.
5. He dislikes the present, prefers either past or future, and tends to think he can reliably predict the future, Yet he may fear the future.
6. He is fairly ready to revise his more marginal beliefs on receiving the word from a trusted leader. He searches for such a leader, tends to have heroes.
7. He believes in a cause or crusade, and thinks that everyone else should do likewise.
8. He is intolerant of those who disagree with him, and believes it necessary to use force.
9. He sees the world as a hard and lonely place.
10. He has a tendency to doubt his own qualities, and to desire martyrdom.
11. He has a feeling of urgency, of much to be done in little time.
12. He desires power and status, sometimes believes he has great potential.
13. He indulges in compulsive repetition of ideas and arguments.
14. He has a paranoid outlook on life, feels persecuted.

HYPOTHESIS VII: EDUCATION AT A CATHOLIC UNIVERSITY REDUCES ETHNOCENTRISM.

It seems to have been established in general terms that education decreases ethnocentrism. Samuelson (1945) found a clear connection between amount of education and responses to a questionnaire on racial prejudice. Hunter (1942) found that attitudes toward the Negro showed the most marked change when freshmen and senior scores were compared on a number of social and political scales. Malherbe (1946) found differentials between forty and fifty per cent among university graduates and people who had only elementary schooling on questions about job opportunities, educational opportunities and political rights in a South African research project. Allport (1954) found that students whose parents had attended college tended to be markedly less ethnocentric than those whose parents had not. Stouffer (1955) found favorable attitudes toward civil liberties to be correlated with amount of formal education. Plant (1958) reported significant declines in E scale scores after four years at San Jose State College. It should not be concluded that education invariably diminishes prejudice, or that every institution affects its students in this way. The conclusions of two of the most thorough studies of the problem are phrased very tentatively:

> While education--especially specific intercultural education--apparently helps engender tolerance, we note that it by no means invariably does so. The correlation is appreciable but not high. (Allport, 1954, p. 434).

> And, we may tentatively conclude that ethnocentrism shows a slight negative correlation with amount of education. It is likely, though far from a demonstrated fact, that college graduates are less ethnocentric than high school graduates, who are in turn less ethnocentric than those who did not complete high school. It is not clear which is more important: that the correlation is greater than zero or that it is at best not far from zero. (Levinson, in Adorno _et al_, 1950,p. 287).

A survey of Catholic literature, from diocesan papers to Papal Encyclicals suggests that the whole weight of the Church is placed on the liberal side in this matter. However, there are some vocal individuals, like Father Terminiello in the thirties, and the Catholic group writing in _National Review_ today, who take a different position. In modern times the Church has usually avoided intervening in controversial social questions where no matter of faith is directly involved, and it could hardly be said that reduction of racial prejudice is one of the institutional goals of this university. Nevertheless, it is probably a goal of most of the personnel of the institution. Allport (1954) concluded that:

> A great many studies have been directed to the question whether Protestants or Catholics as a group display more prejudice. The results are entirely equivical... (p. 449)

Since then, however, the Cornell group has found that the Catholics tended to give affirmative responses to prejudiced statements (Goldsen _et al_, 1960, p. 182). While Sanford reported finding no significant overall differences between Catholic and Protestant performance on the E scale (Adorno _et al_, 1950, pp. 208-221), Rokeach (1960) finds Catholic students score higher than either Protestants or Jews on this measure. One possible explanation of this apparent contradiction between Allport and the Cornell and Michigan studies is suggested by a study of 900 incoming freshmen at an Eastern college. The overall level of prejudice, measured by the Bogardus Social Distance scale, did not vary between religious groups. However, Catholics voiced their prejudices against colored, foreign and non-Christian groups, while Jews seemed to focus on Northern Europeans, and Protestants on the Mediterranean peoples (Spoerl, 1951). Most of the E scale items involve those against whom Catholics display their prejudices.

There appears to be some evidence which suggests the religiousness and prejudice may be coupled together. Sanford concludes that "Subjects who profess to some religious affiliation express more prejudice than those who do not..." (Adorno _et al_, 1950, p. 220). The Cornell group, ignoring denominational differences, found a small but consistent tendency for high scorers on their Religiousness Scale to accept prejudiced statements more readily than low scorers. Rokeach (1960) reports that non-believers scored considerably lower than believers on the E scale, and on other measurers of prejudice.

The principal measures of ethnocentrism are the Bogardus Social Distance Scale and the California E Scale. Both have been used extensively with college populations and have been validated with satisfactory thoroughness.

Either would have been an effective instrument for the testing of this hypothesis. However, the E scale was preferred for the following reasons: 1) the format of responses resembled those used on other tests employed in this study, 2) comparable data from San Jose State College was available, and 3) the statistical relationships between this and other scales used in the present study had already been explored.

The version of the E scale used contained thirty items-- a form already employed in the San Jose State study (Plant, Minimum & Myers, 1959). Four items were dropped from the original thirty-four item scale (Adorno et al. 1950, pp. 110-111) as being out of date or otherwise unsuitable. For the complete scale, the authors report a split-half reliability of .91. Each item correlates on average .60 with the total scale. The method of responses is the same as that for the F, P.E.C. and Dogmatism scales, i.e., three degrees of agreement and three of disagreement, with a seven point range of possible scores and a score of four points being given only where an item was omitted. If three or more items were omitted, the score was not used.

HYPOTHESIS VIII: STUDENTS AT A CATHOLIC UNIVERSITY BECOME MORE CONSERVATIVE, LESS LIBERAL.

The literature dealing with the political impact of college during the thirties differs from that of the postwar period. Changes in liberal or conservation attitudes of students have been observed by many educational researchers.

Corey (1940), after giving six Thurstone Attitude Scales to 234 female freshmen at the University of Wisconsin, retested 100 of them a year later. None of the attitudinal differences found was reliable, but on all scales the change was in the direction toward greater liberalism. Bugelski & Lester (1940) tested 221 University of Buffalo students and found a significant change from freshmen to seniors in the direction of liberality, such changes being greatest among majors in social science. Nelson (1938), after testing a sample of 3,758 students, drawn from eighteen universities, found upper classmen more liberal than freshmen or sophomores. It seems clear that during the period of the New Deal, up to World War II, the impact of college was clearly in the direction of liberalism. Newcomb (1943) found the impact of Bennington to be very strongly in the liberal direction.

Postwar studies reveal a different picture. According to Wise (1958):

> students tend to be conservative in their political economic and social ideas...(but) they do not wish to commit themselves... This 'conservatism' goes well with their tolerance, their limited curiosity, the modest tenor of their life plans. (pp. 29-30)

Various observers have noted, however, a lack of racial prejudices or a general tolerance, which might well be called liberalism. Jacob (1957) sums up these apparently contradictory trends:

> College has a socializing rather than a liberalizing impact on values...It increases the tolerance potential of students towards differing beliefs, social groups and standards of conduct so that they can move about with minimum friction in a heterogenious culture. It strengthens respect for the prevailing order. (p. 53)

The Cornell group noted "a remarkable absence of any intense or consuming political beliefs, interests or convictions on the part of college students", but it found also "an extreme political and economic conservatism" (Goldsen _et al_, 1960). This finding could be interpreted that students prefering the Republican Party outnumber slightly those who lean towards the Democrats, while a majority take an independent, middle of the road position. Goldsen found that the college experience today, though subject to minor institutional variations, seems to produce a change towards greater conservatism.(pp.116-119)

Data on Catholic schools is conspicuously lacking from studies on conservation-liberal attitudes. Lentz (1939) reports that students at denominational colleges are more conservative than others. Kerr (1944) found residents in fraternities to be about average in conservatism. One may speculate on whether the trend at denomination colleges carries over into Catholic ones, and on whether the dormitory life at a fairly expensive school like Santa Clara may have the same effects as living in a fraternity house. More immediately relevant, perhaps, are studies of the attitudes of Catholics attending state schools, and of the connection between strong religious beliefs and conservatism. Murphy and Likert (1938) found that in comparing the children of Hebrew, Protestant and Catholic parents, Hebrew children were the most liberal, Catholic children the most conservative (p.316). Lentz (1939) found that conservatives were the most religious group. Kerr (1944) also found religion to be related to conservatism, and students in campus religious groups to be more conservative than others. Bugelski and Lester (1940) found Catholics, along with Lutherans and Baptists, to be more conservative than other Protestant sects and Jews. Ferguson (1944) finds religionism to be correlated with Republicanism of father, and rates Catholics are "most religionistic". Rokeach (1960) found Catholic students at Michigan State University to be more conservative than Protestants or those who profess no religion. In a sample drawn from New York colleges, the difference between Catholics and Protestants was neglible. Both were toward the political "right" of Jews and nonbelievers (pp.109-119). Thus, it would seem that Catholic college students tend to be more conservative than others.

One of the major difficulties in measuring conservatism, has been the lack of clarity about the trait itself. The tests available obviously do not all measure the same thing. Some have concerned themselves with conservatism as simply as "suspicion of change", others have seen it in more complex forms. Some tests include only items dealing with contemporary economic and political issues. Others range more widely and offer items relating to personal, moral and theological realms. The latter items may strike many practical politicians as being unrelated to the notion of conservatism. Further, conservatism tends to vary in scope according to the position of the viewer. Conservatism connotes the reactionary views of the position of the viewer. Conservatism connotes the reactionary views of the far right to some individuals but to others it appears to embrace most of the policies of both the Republican and the Democratic parties. Therefore, the Research Group found it necessary to use more than one measure of conservatism.

The manual of Lentz's C-R Opinionaire states that:

> People who call themselves conservative or middle of the road, and who have not changed their church, or who did or would vote for Hoover or Smith or Roosevelt, or who are enrolled in the small denominational colleges, make respectively higher conservatism scores on the test than those who rate themselves radical, or have changed their church, or who would or did vote for Norman Thomas, or who are enrolled in large universities (Lentz, 1939).

This description suggests a rather broad notion of conservatism, which would fail to reveal anything but conservatives at Santa Clara. The C-R Opinionaire is attractive in that a wealth of comparative data is available (especially Nelson, 1938, 1954). However, it ranges far and wide from straightforward political-economic questions to ones concerning race prejudice, morals, social conventions, religion, and even tastes in food. All these elements make the interpretation of results difficult. Moreover, they do not necessarily allow for meaningful comparisons between conservatism and other variables. For example, the scale may contain within itself partial measures of those variables with which correlations are reported. Similar objections led us to reject the Bugelski and Lester's scale, and Hunter's Test of Social Attitudes.

The Political and Economic Progressivism Scale, originated by Stagner and developed and used by Newcomb in the course of his Bennington study (Newcomb, 1943), confines itself to political and economic questions. A major difficulty with it, however, is the somewhat obsolete; references to "the depression", "recovery", and the threat of "war against fascism" would be meaningless in a contemporary contest. Similar difficulties, though less acute in form, exist in using the California Political Economic Conservatism (P.E.C.) Scale. This measure, which was eventually used, had to be adapted. The following changes were made in Form 60 of the P.E.C. scale (Adorno et al, 1950, p. 163): "Most government controls over business should be continued after the war", was replaced with, "Most wartime controls over business should be continued". Our item read "No one should be allowed to earn more than $35,000 a year" where the original sum had been $25,000. We replaced Henry Wallace, in "If America had more men like Henry Wallace in office, we would get along much better" with William Knowland; and counted agreement as a sign of conservatism rather than the reverse. But in connection with this last item, the transitory nature of such scales was made very clear to us. In 1959, most respondents appeared at least to know who Knowland was; in 1961, a much larger number of blank answers to this item suggests that he is no longer a symbol of conservatism recognizable by lower division students.

Since these changes already violated the strict comparability of our findings and those reported by the California group, we went one stage further, and to their 14 item P.E.C. scale, form 60, added the only new item in their later P.E.C. scale, form 45-40 (Adorno et al, 1950, p. 169). We would hope, however, that while total scores on the scales could no longer be compared with those reported earlier, scores based on performance per item may still be roughly comparable.

More than half the items deal directly with the economy. The rest are less easily classified.

> The main focus was on...ideological trends which appear to characterize conservatism and liberalism as contrasting approaches to politico-economic problems. The problem was to get behind the specific issues, to move, so to speak, from a purely political to a more psychological level, as a means of differentiating these two broad patterns of social thought (Adorno et al, 1950, p. 153).

The main characteristics of the Conservative as described by Adorno are detailed by the authors:

1. The Conservative approves the status quo, distrusts reformers.
2. Politico-economic problems are regarded by the conservative as inevitable consequences of human nature, while the liberal is anxious to take some action to remedy them.
3. Conservatives value practicality, they regard financial status as an index of social worth, they approve of charity to the poor in a rather patronizing spirit. The Liberals distrust charity as a second best to reform, they do not admire millionaires, and they have a greater appreciation of idealism.
4. Conservatives tend to see political problems in moral rather than sociological terms; they stress honesty and integrity of candidates, while liberals stress stands on issues.
5. Conservatives value laissez faire, they distrust powerful unions but respect businessmen, and they propose that government should be strictly limited in function, particularly in the economic realm.

Thus racial tolerance, patriotism, militarism, isolationism, and attitudes towards freedoms for unpopular minorities are not measured in this scale. This was no doubt because the authors' interest is in correlating this P.E.C. scale with their Ethnocentrism, Anti-Semitism and Fascism scales. To do this, it is necessary to avoid duplication of topics covered, for otherwise the correlation becomes rather meaningless.

The reliability coefficient based on split-half analysis, for Form 60 of the P.E.C. scale (slightly different, of course, to the form used in this study) is reported as being in the neighborhood of .70. Adorno et al suggest (p.164) that the low reliability of the P.E.C. scale, relative to other scales in their study, is due to the fact that political ideologies are frequently not very well organized or consistent within the individual. A further analysis compared the mean score of each item of high-scorers and low-scorers on the scale as a whole. These measures of the discriminatory power of each item are reproduced in Appendix 8. Their general level suggests that the items, particularly those which confine themselves to economic matters, perform satisfactorily.

Some items state conservative propositions, others liberal ones. The method of responding to and scoring the test is as follows:

Response:	Points Scored: Conservative Item:	Liberal Item:
I strongly agree or accept the statement	7	1
I agree or accept the statement	6	2
I tend to agree or accept the statement	5	3
I tend to disagree or reject the statement	3	5
I disagree or reject the statement	2	6
I strongly disagree or reject the statement	1	7

If a respondent left one answer blank, he was given an extra four points; if he left out more than one item, he was given no score on the P.E.C.scale.

Two other measures of conservatism have recently been developed. The Cornell study evolved a number of questions relating to conservatism: a four item Philosophy of Government scale (Goldsen et al, p. 111). It concentrates on attitudes to state control of the economy. A more traditional approach to conservatism was used by McClosky (1958) in his Classical Conservatism scale. The P.E.P., P.E.C., and Cornell Philosophy of Government scales depend heavily on the equation of conservatism with rejection of welfare economics. The Classical Conservatism scale is based on the statements of Edmund Burke and later philosophers who are generally recognized as conservatives. The essence of the conservative position, seen in its historical context, lies not in its economic doctrine but in its attitudes towards the nature of man, society, and the possibility of satisfactory change and reform. The present research group decided to use the McClosky Classical Conservatism scale in the second phase of this study.

The scale contains nine items, all in some way related to problems of change and reform. Agreement with each one is a sign of conservatism; the individual who agrees gets one point. The scale thus has a scoring range from zero to nine, with high score indicating conservatism. Data on the construction and validation of the scale are discussed by the author (McClosky, 1958) in an article, and will subsequently be described more fully in a book. He reports that scores on the scale correlate in the predicted way with other measures. An informed group of graduate students was also asked to characterize the items, and in doing so confirmed the author's judgment of their nature. A challenge to its validity has been issued and has received a reply (Kendall, 1958; McClosky, 1958).

Finally, a measure of conservatism was developed in the course of the present study and will be described in the next chapter. It is interesting to note that the correlations between the three different measures of conservatism used bear out the view that conservatism is by no means a simple entity. Whether or not any group is found to be conservative may be largely dependent on the measuring device employed.

Table II - 1: Correlations Between Three Measures of Conservatism: Santa Clara Students, 1961.

Measures:	Pearson r
P.E.C. scale and Classical Conservatism Scale:	.099
P.E.C. scale and S.C.U. Conservatism scale:	.356
Classical Conservatism scale and S.C.U. Conservatism scale:	.232

CHAPTER III - THE TEST OF CRITICAL THINKING IN ETHICS

1. The Construction of the Test:

The Test of Critical Thinking in Ethics was designed primarily to measure three particular traits: adherence to the official doctrines of the Catholic Church, inconsistency in thinking about values, and tendency to perceive facts in a way distorted by value commitments. In the course of constructing the test it was found that measures of certain other traits could be included by utilizing some of the items in more than one way, thus adding only a few extra items. These scales, useful insofar as they measure certain variables without the administering of additional instruments, were byproducts; data on their reliability was gathered only after the final form of the questionnaire had been completed.

The Deviation, Inconsistency and Moralistic Perception Scales were constructed by the six people listed as the research group and associates. Each represented a different discipline. Five were Catholics, while one (the director) was not. In both religion and politics, most members of the group tended to the liberal side. All the statements included in the test were intended to be in some degree plausible or persuasive; but many of them were intended to form contradictory pairs, and others to embody a distorted view of the facts. The validity of any item intended to contribute to the major scales was voted on by the whole group, and generally was not included unless approval was unanimous. It was hoped by this means to avoid too narrow a conceptualization of the items, and to eliminate as far as possible controversial elements.

The test went through five different formats during its development, with 100, 109, 114, 138 and finally 150 items respectively. At the start, a number of items from Dressel & Mayhew, Inventory of Beliefs, were used, but most of these were eliminated before the final form was reached; though we acknowledge that this was a source of ideas. After each form of the test was developed, it was administered to a small group of students: 41 sophomores in a Political Science course, 27 summer session students at Santa Clara, 42 summer session students at the University of San Francisco, 21 summer sessions students at San Jose State College. Only the Political Science students were later involved in the actual testings, and by then the test had been so drastically revised that it could hardly be regarded as the same instrument. After each practice testing, various simple statistical analyses were undertaken, although the groups involved were not deemed either sufficiently large or sufficiently typical (the U.S.F. group, for example, was found to include 28 nuns) to justify extensive treatment Phi-coefficients were computed for the major scales, and a frequency count of responses on each item was made. In one instance, a group of 14 students were given the test on a Friday, and received it again on the following Tuesday, to provide some rough measure of stability. If any items showed up as consistently inferior in terms of their phi-coefficients or stability, or if they did not produce any variety of responses, they were dropped or modified. Extensive statistical tests of validity were not undertaken until the final form of the questionnaire had been decided; these findings are reported later.

The final form of the test was headed:

> "Place a number according to the key below on the line corresponding to each question. Please answer each question.
>
> KEY: 1. - Strongly agree or accept the statement.
> 2. - Tend to agree or accept the statement.
> 3. - Tend to disagree or reject the statement.
> 4. - Strongly disagree or reject the statement.
>
> Please read each item carefully; each is intended to mean exactly what it says."

The 150 items followed, and a separate answer sheet was provided, on which respondents wrote a '1', '2', '3', or '4' according to their choice. The answer sheets were subsequently used as source documents for the I.B.M. key punch operator, and the tests were scored by computer.

2. The Measures Yielded.

(a) Inconsistency. To test tendency to hold contradictory propositions within one belief system, as required by our second hypothesis, 69 pairs of statements were designed, each part of a pair logically incompatible with the other. The statements involved value judgments in the ethical, political, social or theological realms; in most cases the contradiction lay between a statement of principle and another of application; sometimes one principle contradicted another. The Catholic nature of the population to be tested was kept in mind throughout, and many of the statements are clearly likely to have a more direct appeal to Catholics than to others; this must be remembered when comparative data is interpreted.

The pairs were scattered about in the test so that in each case an item was separated from its mate by at least ten other statements. A few items contributed to more than one pair. To obtain a score on a pair, a respondent had to agree with both parts of it; the method used was as follows:

Paired Statements:	Statement "A":	Statement "B":	Points
Responses:	"Strongly agree"	"Strongly agree"	6
	"Strongly agree"	"Tend to agree"	5
	"Tend to agree"	"Tend to agree"	3

The inconsistency score for the individual was arrived at by adding up his score on the 69 pairs.

Some examples of the pairs used:

a. Loyalty, whether to one's family, political party, or country, is the highest virtue.
b. No really good man would have fought in Hitler's army in World War II.

a. The telling of a lie with intent to deceive can never be justified.
b. Telling a lie to save a life really is morally justifiable.

a. Homosexuals are entitled to the same justice as anyone else.
b. We should not allow the usual legal protection for individuals who commit appalling crimes such as dope peddling or perversion.

a. The American Way of Life is specifically Christian.
b. Western man is on the whole unthinking, materialistic and superficial.

Inevitably, some of the pairs will be open to challenge, on the ground that by a certain interpretation both parts may be logically compatible. However, the research group does not believe that such demonstrations, even if they can be made in a number of cases, will seriously damage the validity of the scale. We would maintain that if the common interpretation of the two statements is contradictory, if the pair in question can be shown to contribute satisfactorily to the total inconsistency score, and if the scores themselves are stable and discriminating, and correlate with certain other measures in the expected ways, then the scale retains its validity.

(b) Moralistic Perception. This scale was designed to measure tendencies for values to distort perceptions of fact. 35 statements were developed. All of them were in some way appealing, and all involved what the research group judged to be a misperception of fact. In the course of developing the scale, four subscales were used: Conservative, Liberal, General Christian, and Specifically Catholic. The subscales were later scrapped, but their titles indicate the varities of viewpoint to which the moralistic perception items are intended to cater. The Catholic subscale contained six items only, while the other three were of approximately equal size. Two points were scored for each statement agreed with strongly; one point for a "tend to agree" response. Some examples of the items:

a. Socialised medicine means that doctors virtually become robots. (Conservative)

b. While one certainly need not accept any Communist ideas, one should realise that there is no evidence that the American Communist Party would ever participate in any illegal activities. (Liberal)

c. The divinity of Christ is as historically demonstrable as the existence of Julius Caesar. (General Christian)

d. To say that a country can have an over-population problem is absurd; what it actually may have is an underproduction problem. (Catholic)

(c) Deviation. These scales were designed to measure deviations from the norms and doctrines of the Catholic Church. Authoritative statements of these doctrines were consulted, and only matters on which the Church has taken a clear and definite stand were included. The Broad Deviation scale included some items on which agreement signified deviation, others on which disagreement did so. The narrow Deviation scale included the former type of item only. In each case, a strong deviation scored two points, a tending deviation scored one point. The two scores, 'Broad' and 'Narrow' could have been added together, to produce a total deviation score, but it was decided not to do this. The Broad Deviation scale contained 17 items, the Narrow Deviation scale 7 items. Some examples of the items:

a. The highest motive for being good is the advantage it can achieve for both society and ourselves. (To agree is to deviate broadly)

b. Sterilization for the purpose of preventing feeblemindedness can never be justified. (To disagree is to deviate broadly)

c. Even though most people may do it, kissing on a date is immoral. (To agree is to deviate narrowly)

(d) Attitude to Rights and Liberties. This scale is designed to measure political tolerance. It contains twelve items, on four of which agreement is a sign of tolerance, while on the remaining eight agreement indicates intolerance. With the usual four responses available, the scoring method was:

Tolerant statements:	Intolerant statements:	Points:
Strongly agree	Strongly disagree	5
Tend to agree	Tend to disagree	4
Tend to disagree	Tend to agree	2
Strongly disagree	Strongly agree	1

Example of the items:

a. The Bill of Rights is basic to our form of government, and we should resist any attempts to dilute or curtail it. (Tolerant)

b. Atheistic propaganda is contrary to Christianity, and should not be permitted in a society like ours. (Intolerant)

c. People who are unwilling or unable to understand politics should not be allowed to take part in elections. (Intolerant)

(e) Attitude to Segregation Scale. This scale has much the same traits as the longer and already well established California 'F' scale, save that there is a much greater concentration on the specific problem of racial integration. If it possesses any advantages over the 'F' scale, these can only be brevity, and that perhaps the items are more appealing to contemporary Northern college students. Six of the items state a pro-segregation position, the remaining three a pro-integration one. The scoring is as follows:

	Pro-segregation statement:	Pro-integration statement:	Points:
Responses:	Strongly agree	Strongly disagree	5
	Tend to agree	Tend to disagree	4
	Tend to disagree	Tend to agree	2
	Strongly disagree	Strongly agree	1

Examples of the statements:

a. A community has a right to decide what kinds of people it will permit to move into its own area. (pro-segregation)

b. Negroes in the United States should be accepted and treated as complete equals. (pro-integration)

(f) Conservatism Scale.

Some of the difficulties of defining or measuring conservatism have already been discussed. This scale assumes that conservatives favor laissez-faire and suspect all forms of socialism, that they are somewhat pessimistic about the possibilities for change and improvement, that they see some compensations in war, and that they stress the need for leadership. Items dealing with rights, tolerance or racial questions were deliberately excluded. Both positive and negative items were again included, and scored as follows:

	Conservative Statement	Liberal Statement	Points
Responses	Strongly agree	Strongly disagree	5
	Tend to agree	Tend to disagree	4
	Tend to disagree	Tend to agree	2
	Strongly disagree	Strongly agree	1

Examples of the items:

a. Initiative and ability should always be rewarded in any economic system. (Conservative)

b. A minimum wage law prevents injustice to the poorest members of society. (Liberal).

c. War tends to bring out the finest qualities in men. (Conservative).

So much for the particular scales. All papers were scored according to the rules given, except when respondents failed to answer one or more of the questions. More than ten blanks disqualified the paper from obtaining any kind of score. If an item contributing to any pair or pairs on the Inconsistency scale was omitted, one point was added to the individual's score; if following this procedure would mean adding more than five points for omissions, the score was scrapped. One point was added to the Moralistic Perception Scale if two items were omitted; three or four omissions added two points; with more than four omissions, and the score was scrapped. On the remaining scales, more than one omission was enough to cause the whole scale score to be rejected. When one item was omitted, the Deviation scores were left unchanged, but on the three political scales, 3 points were added.

Before turning to the validity of the test, it may be useful to summarize the foregoing pages in tabular form.

Table III - 1: Description of the Test of Critical Thinking in Ethics.

Name of Scale	Number of Items	Type of Items	How Responses were Scored	A High Score Indicates Respondent
Inconsistency	69	all pairs	1-1 1-2 2-2 6 5 3 Responses given: 1= 2= 3= 4=	Is inconsistent in ethical thinking.
Moralistic Perception	35	all positive	2 1 . .	Has distorted view of facts.
Broad Deviation	17	10 positive	2 1 . .	Approves that which the Church condemns.
		7 negative	. . 1 2	
Narrow Deviation	7	all positive	2 1 . .	Condemns what the Church permits.
Rights and Liberties	12	4 positive	5 4 2 1	Respects rights of others.
		8 negative	1 2 4 5	
Segregation	9	6 positive	5 4 2 1	Approves segregation of races.
		3 negative	1 2 4 5	
Conservatism	11	9 positive	5 4 2 1	Is conservative.
		2 negative	1 2 4 5	

3. Validation of the Test.

The following measures of validity and reliability were made for the Critical Thinking in Ethics Test: split-half reliability, stability, item correlations with total scales, intercorrelations of the scales, and correlations with established measures. Except where otherwise noted, the computations are based on the scores of the whole Santa Clara group tested in May, 1961—1,011 cases, less those few whose answers on one or more scales were unstable. The results are presented below.

Table III-2

Split-Half Reliability Coefficients for Six Sub-Scales of the Critical Thinking in Ethics Test.

Scale	Sample Used	Number of Scale Items	Split-half* Reliability
Inconsistency	100 S.C.U. seniors	69	.854
Moralistic Perception	1,011 S.C.U. students	35	.778
Broad Deviation	100 S.C.U. seniors	17	.639
Narrow Deviation	100 S.C.U. seniors	7	.453
Rights & Liberties	1,011 S.C.U. students	12	.653
Segregation	1,011 S.C.U. students	9	.541

* Corrected according to the Spearman Brown formula.

This table III-2 shows the correlations between odd-even halves of the various scales, computed either for the whole population tested in 1961, or for a section of it. It will be seen that the size of the coefficients tends to be related to the number of items in the scale. The Inconsistency and Moralistic Perception Scales, which have the highest coefficients are also those which were accorded most attention by the research group during the construction of the test. All of the uncorrected correlations were significant at the .01 level of confidence.

Table III-1

Stability: Correlations Between Test and Retest Performance on Seven Sub-Scales of the Critical Thinking in Ethics Test.

Number of Cases:	27	97
Testing Dates:	May, Sept., 1960	Sept., Oct., 1960
Interval:	Four months	Six weeks
Inconsistency	.813	.739
Moralistic Perception	.693	.524
Broad Deviation	.788	.600
Narrow Deviation	.475	.856
Rights & Liberties	.710	.678
Segregation	.456	.722
Conservatism	.505	.602

Table III-3 shows the correlations between test and retest performance over two time intervals. One group consisted of 27 seniors at a Catholic high school tested before graduation and retested on arrival at Santa Clara. The other group consisted of 97 college freshmen tested during orientation week and retested six weeks later. The Inconsistency scale appears to be quite stable from one testing occasion to another and the magnitudes of the other coefficients seem satisfactory for research purposes. For comparison, stability coefficients from .39 to .84 are reported for the Allport-Vernon Study of Values given to an undescribed group over a three month interval (Cronbach, 1960, p. 140).

Table III-4

Item Correlations with Total Test for Items in Each of the Scales in the Critical Thinking in Ethics Test.

Scale	Number of Scale Items	Item Correlations							
		.34 or less	.35-.39	.40-.44	.45-.49	.50-.54	.55-.59	.60-.64	.65 or more
Inconsistency	169	30	15	9	9	4	1	1	
Moralistic Perception	35	1	4	4	3	3	1		
Broad Deviation	17		3	1	4	5	3	1	1
Narrow Deviation	7	1				1		4	1
Rights & Liberties	12	3		1	3	1	3	1	
Segregation	9	1				3	2	1	2
Conservatism	11	2		4	3	2			

Table III-4 presents a summary of the correlation coefficients between the items and the total scores for each of the subscales of the Critical Thinking in Ethics Test. Non-Catholics were excluded from the analysis of the Deviation Scales. The Coefficients were determined by comparing the proportion of successes in the top and bottom 27 per cent categories, as determined by total scores on each scale. The resulting percentages were incerted in a table constructed by Flanagan, and a correlation coefficient was obtained, revealing the relationship of each test item to the total scale score. This method is outlined by Thorndike (1949, p. 241 ff). For comparison Adorno et al (1950, p.261) reports a range of .15 to .59 with an average of .33 for a similar analysis of the F scale. The comparatively poor performance of the Inconsistency scale may perhaps be accounted for in two ways. First, a respondent had to agree to two statements in order to accumulate a score on each item; disagreement with either or both halves of a pair resulted in no score on that item. Second, with 69 items and a possible score of six points on each item, the theoretical range of inconsistency scores was 0—414. However, in practice, a large majority of respondents scored less than 100, and only a handful exceeded 50 per cent of the possible total score. Thus, for any particular item, less than half the respondents tended to get a score. While this distribution may make the scale somewhat cumbrous, it can perhaps be defended. If, during the practice testings, a majority of respondents answered inconsistently on any pair, the research group scrutinized the face validity of that pair with

with extra care, and frequently altered it so as to rule out any ambiguity which could make the two statements logically compatible with one another, thus reducing the number of people likely to be inconsistent. In short, a high degree of face validity was perferred to a high degree of discriminatory power, and for this reason a large number of items had to be included in the scale.

Table III-5

Intercorrelation of the Scales on the Critical Thinking in Ethics Test.

Inconsistency						
Moralistic Perception	.672					
Broad Deviation	.275	.137				
Narrow Deviation	.533	.561	.020			
Rights & Liberties	-.404	-.320	-.085	-.230		
Segregation	.330	.211	.221	.103	-.264	
Conservatism	.378	.292	.078	.199	-.110	.210

TableIII-5 presents the intercorrelations among the scales of the C.T.I.E. test. The Inconsistency and Moralistic Perception scales correlated highest, .672, and both correlated highly with the Narrow Deviation scale. The low correlation, .020, between Broad and Narrow Deviation is of interest since it suggests that Deviation of itself is not a single variable. Different people reject the official doctrines of the Church, perferring "puritanical" (narrow) or pragmatic (broad) alternatives. It should be remembered that many items in the test served more than one function, contributing to more than one scale. For this reason some amount of intercorrelation between the scales might be expected, and the fact that most of the correlations were moderate would seem to suggest that each scale was in fact measuring a different trait—a desirable finding.

Table III-6

Correlations of the Scales of the Critical Thinking in Ethics Test with Measures of Ability.*

	Dressel, Form G, Test of Critical Thinking.	College Entrance Examination Board Test.	Grade Point Average (one year)
	n= 976	n= 775	n= 830
Inconsistency	-.322	-.304	-.258
Moralistic Perception	-.386	-.315	-.308
Broad Deviation	-.257	-.116	-.141
Narrow Deviation	-.330	-.321	-.237
Rights & Liberties	+.256	+.202	+.102
Segregation	-.185	-.220	-.150
Conservatism	-.098	-.079	-.167

*For the size of groups involved a coefficient of correlation had to reach .088 to be significant at the .05 level and .115 at the .01 level of confidence.

Table III-6 presents one kind of validity coefficient, the correlation between all the C.T.I.E. scales and three measures of ability; i.e., a test of Critical Thinking, the College Entrance Examination Board scores, and the grade point average accumulated over one year at Santa Clara. All the Correlations are in the expected direction. The Rights and Liberties scale was the only one on which a high score would be generally agreed to be desirable. For Inconsistency and Moralistic Perception, since a high score involves logical contradiction or error on matters of fact, an appreciable negative correlation with measures of ability was expected and observed. As reported in the next chapter, no correlation better than -.344 was found between any measure of ability and any of the established attitude tests employed. Broad or Narrow deviation scores may be high either because an individual rejects the positions of the Catholic Church, or because while accepting the Church he does not comprehend its doctrines. The latter type of deviation would seem to be linked to ability, and the negative correlations with all the measures would thus be expected. The correlations between Broad Deviation and the C.E.E.B. test and grade point average were barely significant. Performance on the Narrow Deviation scale appears to be more closely related to ability. None of the three political scales correlated with the measures of ability in an empressive way, but there is less reason to expect that they should do so. McClosky (1958) found that conservatism correlates negatively with both education and intellectuality. It may be remarked here that if the correlation between the Conservatism scale of the C.T.I.E. Test and these three ability measures was low, the correlation of the California P.E.C. scale with the same measures was found to be even lower.

Table III-7

Correlations of the Scales of the Critical Thinking in Ethics Test with Measures of Social and Political Attitudes.

	Rokeach Dogmatism Scale	California F (pro-fascism) Scale	California E (Ethnocentrism) Scale	California P.E.C. Conservatism Scale	McClosky Classical Conservatism Scale
Inconsistency	.545	.633	.491	.168	.459
Moralistic Perception	.564	.635	.432	.125	.435
Broad Deviation	.072	.129	.239	.004	.088
Narrow Deviation	.381	.472	.318	.078	.334
Rights & Liberties	-.300	-.367	-.444	-.045	-.243
Segregation	.228	.348	.598	.161	.194
Conservatism	.310	.353	.305	.356	.232

Table III-7 presents the intercorrelations of the C.T.I.E. scales with various established measures of authoritarianism, ethnocentrism and conservatism. Of the five established measures, the California Political and Economic Conservatism Scale correlated significantly only with the C.T.I.E. Conservatism scale, and this correlation, .356, was not large. However, it is observed to be larger than the intercorrelation of the two established measures of conservatism. These results for the P.E.C. Scale, together with others to be reported in the next chapter, suggest that this scale, as modified for the present research, may not measure any genuine trait in the population with which we were dealing.

With the other four established measures, Inconsistency and Moralistic Perception correlated fairly well, and Conservatism, Narrow Deviation, Segregation and Rights & Liberties moderately well in the expected directions. The negative correlations of the Rights and Liberties Scale with measures of authoritarianism did not reach a particularly high level, a finding which may suggest that in a Catholic population, dogmatism and devotion to the principles of democracy and tolerance may not be mutually exclusive. These correlations may also suggest that the C.T.I.E. measure of attitude towards democracy has only limited validity. The correlation of the Segregation scale with the E scale at .598 was taken to indicate that the former is adequate for research purposes, but needs further refinement. The correlations with Narrow Deviation, significantly positive with authoritarianism and ethnocentrism, and significantly negative with measures of ability, suggest that this scale is tapping the same narrow and punitive moralism which such writers as Adorno (1950), Hoffer (1951) and Rokeach (1960) have discussed. The substantial correlations of Inconsistency and Moralistic Perception with authoritarianism were expected, and were taken as evidence for the validity of these scales. These traits were the only clearly undesirable ones which the C.T.I.E. test was designed to measure.

The lack of significant correlations between the Broad Deviation Scale and other measures (no coefficient higher than .257 was found with any the 14 measures used) is of some interest. None of the seventeen items in this scale had a correlation between item and total test score of less than .36, suggesting that the scale was tapping a genuine variable. Yet this trait is apparently not closely related to any other.

On the basis of all the results discussed above, it was assumed that the Test of Critical Thinking in Ethics was a valid instrument for research purposes, but that it could use considerable further refinement. The Inconsistency and Moralistic Perception scales appeared to meet most tests of reliability and validity in a satisfactory way, while the Narrow Deviation, Rights and Liberties and Segregation scales performed in a slightly less satisfactory way. The Conservatism scale seemed the most suspect, perhaps because the variable it was intended to measure was the most difficult to analyse. The Broad Deviation Scale remained something of a problem, with a high degree of face validity, a satisfactory level of internal reliability and an apparent lack of relationship with any other variable measured.

CHAPTER IV - PROCEDURE

The basic population used in the study consisted of the male undergraduate students enrolled in this, a small Catholic university. Data on three other student populations was collected for comparison purposes: from a neighboring state college, from a junior college, and from a Catholic college preparatory school. Tests were administered at this university on four occasions, and once only at the other institutions. The contents of the test batteries varied with the requirements of the study and the amount of time available. Details of the tests given are set out in table one, and the content of the different batteries is shown in table two.

At the value-oriented university the entire student body was required to take the tests in 1959 and 1961, classes being excused for the purpose. In 1960, seniors were excused from class for one morning, and in the fall semester, entering freshmen were tested during the orientation week. At the state college, most of the tests were administered in sections of the introductory psychology course, to a predominatly freshman group. When a longer class period was available, the test battery was expanded. At the junior college, testing was also done in the freshman classes. At the college preparatory school, which supplies a fair number of students to the University of Santa Clara, the senior class was tested shortly before graduation.

The tests were administered by faculty who had been given written instructions by the research group; a copy of these is contained in Appendix IX . Proctors answered questions about test administration, but were asked to refrain from commenting on the purposes or content of the test question. Anonymity was promised(and subsequently respected) in the hope of encouraging greater frankness and honesty. It was, however, necessary to obtain the names of respondents so that their test scores could be connected with background data and retest performance. This was done either by issuing a numbered card with detachable stub some days before the testing (1959) or, more simply by having students sign a numbered card at the start of the testing. Since all the tests were self-administering, students worked at their own speed. In an attempt to ensure proper participation during the Santa Clara testings, no one was allowed to leave in less than one and one half hours. Most completed the tests in less than two and a half hours.

The tests were then scored according to the procedures already described. In 1959 and 1960, the Critical Thinking in Ethics Test was scored on the I.B.M. # 709 with the aid of a program written for the purpose, and in 1961 this program was adapted so that all the tests, except for the form 'g' could be scored on the # 7090. The form 'g' test of critical thinking, being the only one to have one correct answer for each question, was scored on the I.B.M. 805 throughout.

Background data was then gathered on all subjects from the files of the various Registrars; where necessary, it was supplemented with a few questions to the respondents themselves. This information was utilized in two ways. First it made possible descriptions of the whole population tested at each institution, so these institutions could be compared with one another and with others not participating in this study. Second after individual backgrounds and scores had been connected, various hypotheses involving the test performance of different types of student could be verified.

The assessment of the effects of university experience pervaded most of the objectives of the research. Two approaches to this problem were utilized. The first, conventionally referred to as the cross-sectional study, involved a comparison of four student groups with differing amounts of exposure to college influences: freshmen, sophomores, juniors and seniors. Such comparisons could be made most easily between the four groups who took the tests in 1959, and those who did so in 1961. However, an assumption of this method of measuring college impact is that any differences will be due to college experience. The availability of two sets of cross-sectional data provided some check on the existence of accidental differences between the groups, although a large number of the same individuals participated each time. A more serious problem, however, concerned the academicmortality rate; large numbers of entering freshmen do not graduate, many because of poor academic performance. If improvement in the mean score on any characteristic, particularly one which might be associated with academic proficiency, were found by the cross-sectional method of measurement, it might be due to the dropping out of inferior students rather than to the beneficial effects of the university.

A longitudinal analysis of the data was therefore undertaken. All students were tested in September, 1959, and the senior class was retested eight months later, just before graduation. The remainder of the students were retested twenty months later, in May, 1961. Freshmen who had been tested on entry in September, 1960, were also retested this time. By excluding all those who were not involved in these test-retest series, it was hoped that a more accurate picture might be obtained of the university's role in any fluctuation in attitude or thought.

A comparative analysis was also attempted. Ideally, a corresponding sample of students at a secular school would have been subjected to the tests at the same times as those at Santa Clara. However, this did not prove practicable. The comparison groups obtained in the course of this study involved freshmen and high-school seniors for the most part, and could not therefore exemplify impact of college experience. They were useful, however, in providing various base lines for the study of impact, showing the extent to which the population tested at our value-oriented university differed from groups who chose a different kind of institution. Other comparative data was drawn from published material, and some was kindly provided by other researchers whose work was not yet complete.

Each type of analysis involved basically the same statistical procedures: mean, standard deviation, standard error of the mean, standard error of the difference between means, and t ratios. These statistics were computed for the cross-sectional, longitudinal and comparative analysis of all measures used. In addition, Pearsonian r was computed for the longitudinal study, as well as for certain validational purposes. All statistical analysis followed the formulae suggested by Guilford.

Table IV - 1

Measures Employed in the Santa Clara Student Attitude Study

Author(s) of Test:	Name of Test:	Scales and Measures Yielded by the Test:	Number of Items:
Santa Clara research group.	Test of Critical Thinking in Ethics.	Inconsistency	69 pairs
		Moralistic Perception	35
		Broad Deviation	17
		Narrow Deviation	7
		Rights & Liberties	12
		Conservatism	11
		Ethnocentrism	9
M. Rokeach	Dogmatism scale	Dogmatism	40
P. Dressel	Form G, Test of Critical Thinking.	Critical Thinking	52
Adorno et al.	E scale	Ethnocentrism	30
	F scale	Pre-fascist attitudes	30
	P.E.C. scale	Conservatism	15
H. McClosky	Classical Conservatism Scale	Conservatism	9

Table IV-2

Summary of Groups Tested at Various Institutions and of Measures Employed at Santa Clara University

		Class of 1960	Class of 1961	Class of 1962	Class of 1963	Class of 1964	Total n	Other Institutions: n
1959, Sept.	n:	297	242	251	243		1033	State College: C.T.I.E.: 951 Dogma.: 156 P.E.C.: 156 Junior College: C.T.I.E.: 204
Tests used:		C.T.I.E. Form 'g' Dogmatism P.E.C.	C.T.I.E. Form 'g' Dogmatism P.E.C.	C.T.I.E. Form 'g' Dogmatism P.E.C.	C.T.I.E. Form 'g' Dogmatism P.E.C.			
1960, May	n:	213					213	Prep School: C.T.I.E.: 151
Sept.	n:					341	341	
Tests used:		C.T.I.E. Form 'g' Dogmatism P.E.C. E. F.				C.T.I.E. Dogmatism E. F.		
1961, May	n:		241	207	215	348	1011	
Tests used:			C.T.I.E. Form 'g' Dogmatism P.E.C. E. F. Cl. Cons.	C.T.I.E. Form 'g' Dogmatism P.E.C. E. F. Cl. Cons.	C.T.I.E. Form 'g' Dogmatism P.E.C. E. F. Cl. Cons.	C.T.I.E. Vernon Dogmatism E. F. Cl.Cons.		
Test and Retest	n:	209	207	185	207	322	1130	

CHAPTER V - THE FINDINGS

The first two sections of this chapter will be mainly concerned with the presentation of data. We have given these data in full, in the hope that they may be of immediate service to other investigators. At the end of each of the two sections, the first containing the cross-sectional analysis, the second the longitudinal one, trends and significant differences are summarized. The third section attempts a synthesis of the data based on Santa Clara findings alone, while the fourth offers comparisons with other institutions. The aim here was to estimate the direction and magnitude of the university's impact on its students. In the fifth section, scores of students entering Santa Clara are contrasted with scores of students entering other institutions. The sixth section has a similar purpose, wherein the focus is on data obtained from various personnel files. Although the last section does not bear directly on the main subject of the research, it presents correlations between established measures used in the study.

1. The Cross-Sectional Study.

Mean scores, standard deviations, and critical ratios are presented in the following tables. The entire student body at Santa Clara was tested first in September, 1959, and again in May, 1961. Two cross-sectional studies were therefore possible and the results of both are shown. One set of tables is devoted to each measure and table V-14 gives a summary of the trends found.

Table V-1

Means, Standard Deviations, and Critical Ratios for the Inconsistency Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	286	85.9	39.75
Sophomores	236	79.9	39.59
Juniors	247	74.1	32.25
Seniors	236	75.5	31.93

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	339	84.9	35.71
Sophomores	236	72.8	36.82
Juniors	200	69.5	33.95
Seniors	211	72.1	32.75

Critical Ratios for Cross-Sectional Study

		1961			
	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		3.86	4.93	4.27
	Sophomores	1.73		0.98	0.24
	Juniors	3.78	1.74		0.77
	Seniors	3.31	1.31	0.47	

Table V-2

Means, Standard Deviations, and Critical Ratios for the Moralistic Perception Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	285	18.5	7.08
Sophomores	237	16.3	7.53
Juniors	246	15.5	6.89
Seniors	236	15.1	6.43

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	339	18.1	6.92
Sophomores	236	14.2	6.42
Juniors	200	13.9	6.62
Seniors	211	12.8	6.66

Critical Ratios for Cross-Sectional Study

1961

	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		6.97	7.02	8.86
	Sophomores	3.24		0.48	2.18
	Juniors	4.64	1.20		1.61
	Seniors	5.40	1.90	0.74	

Table V-3

Means, Standard Deviations, and Critical Ratios for the Broad Deviation Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	290	7.6	4.61
Sophomores	238	7.2	4.97
Juniors	247	6.9	4.65
Seniors	236	6.5	4.47

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	339	7.5	4.28
Sophomores	236	7.3	4.26
Juniors	199	7.2	4.76
Seniors	211	6.9	4.70

Critical Ratios for Cross-Sectional Study

		1961			
	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		0.59	0.76	1.46
	Sophomores	0.92		0.22	0.86
	Juniors	1.70	0.68		0.58
	Seniors	2.76	1.63	0.99	

Table V-4.

Means, Standard Deviations, and Critical Ratios for the Harrow Deviation Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	290	5.2	4.17
Sophomores	238	4.8	2.28
Juniors	247	4.7	2.54
Seniors	236	4.3	2.34

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	339	5.0	2.43
Sophomores	236	4.1	2.44
Juniors	200	4.2	2.62
Seniors	211	3.3	2.28

Critical Ratios for Cross-Sectional Study

1961

	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		4.25	3.38	8.37
	Sophomores	1.41		0.45	3.76
	Juniors	1.71	0.45		3.90
	Seniors	3.33	2.62	2.05	

Table V-5

Means, Standard Deviations, and Critical Ratios for the Rights and Liberties Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshman	290	43.1	5.47
Sophomores	237	44.1	5.85
Juniors	247	43.9	5.37
Seniors	236	43.5	5.62

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshman	339	42.5	5.81
Sophomores	236	43.5	5.57
Juniors	200	44.4	5.98
Seniors	211	43.9	5.75

Critical Ratios for Cross-Sectional Study

		1961			
	Class	Freshman	Sophomores	Juniors	Seniors
1959	Freshman		2.08	3.56	2.72
	Sophomores	2.10		1.58	0.70
	Juniors	1.78	0.40		0.87
	Seniors	0.83	1.21	0.86	

Table V-6

Means, Standard Deviations, and Critical Ratios for the Segregation Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	286	23.5	5.12
Sophomores	237	23.4	5.76
Juniors	247	23.0	5.38
Seniors	236	22.8	5.00

1961 Cross-Sectional Study

Class	N.	M	S.D.
Freshmen	339	23.4	5.15
Sophomores	236	22.7	4.98
Juniors	200	22.1	5.09
Seniors	211	22.9	4.93

Critical Ratios for Cross-Sectional Study

		1961			
	Class	Freshmen	Sophomores	Juniors	Seniors
	Freshmen		1.69	2.89	1.29
	Sophomores	0.10		1.23	0.33
1959	Juniors	0.90	0.72		1.52
	Seniors	1.52	1.27	0.56	

Table V-7

Means, Standard Deviations, and Critical Ratios for the Conservatism Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	285	33.4	4.42
Sophomores	237	34.3	4.68
Juniors	247	33.6	4.35
Seniors	236	33.5	4.58

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	338	34.9	4.45
Sophomores	236	33.2	4.69
Juniors	200	34.0	4.97
Seniors	211	33.5	4.87

Critical Ratios for Cross-Sectional Study

	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		4.50	2.14	3.53
	Sophomores	2.40		1.80	0.64
	Juniors	0.64	1.75		1.12
	Seniors	0.23	2.05	0.38	

Table V-8

Means, Standard Deviations, and Critical Ratios for the Dogmatism Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	287	166.0	21.62
Sophomores	237	158.4	21.82
Juniors	249	158.2	22.44
Seniors	232	155.6	20.88

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	335	171.0	22.53
Sophomores	235	158.3	22.10
Juniors	196	156.1	23.83
Seniors	211	155.8	22.80

Critical Ratios for Cross-Sectional Study

1961

	Class	Freshmen	Sophomores	Juniors	Seniors
	Freshmen		6.72	7.10	7.64
1959	Sophomores	3.96		0.98	1.18
	Juniors	4.06	0.11		0.14
	Seniors	5.51	1.40	1.29	

Table V-9

Means, Standard Deviations, and Critical Ratios for the Form 'G', Test of Critical Thinking Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	294	33.6	7.64
Sophomores	241	35.8	8.13
Juniors	250	36.4	7.40
Seniors	238	36.3	7.71

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen			
Sophomores	236	37.5	6.48
Juniors	200	38.0	7.75
Seniors	210	37.5	6.48

Critical Ratios for Cross-Sectional Study

1961

	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen				
	Sophomores	3.32		0.80	0.06
	Juniors	4.46	0.85		0.67
	Seniors	4.12	0.65	0.19	

Table V-10

Means, Standard Deviations, and Critical Ratios for the Political-Economic Conservatism Scale, Cross-Sectional Studies 1959 and 1961, of Santa Clara Student Populations.

1959 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	292	64.2	7.49
Sophomores	239	64.3	7.92
Juniors	250	64.1	7.86
Seniors	233	63.0	8.59

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	337	64.6	7.21
Sophomores	235	61.9	7.77
Juniors	197	62.8	9.01
Seniors	210	62.3	8.18

Critical Ratios for Cross-Sectional Study

1961

	Class	Freshmen	Sophomores	Juniors	Seniors
1959	Freshmen		4.17	2.32	3.30
	Sophomores	0.26		1.14	0.53
	Juniors	0.16	0.39		0.61
	Seniors	1.65	1.78	1.43	

Table V-11

Means, Standard Deviations, and Critical Ratios for the Ethnocentrism Scale, Cross-Sectional Study 1961, of Santa Clara Student Populations.

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	335	97.2	23.89
Sophomores	231	89.9	20.98
Juniors	193	86.7	21.81
Seniors	209	88.7	22.16

Critical Ratios for Cross-Sectional Study

1961

Class	Freshmen	Sophomores	Juniors	Seniors
		3.81	5.13	4.21
			1.54	0.60
				0.91

Table V-12

Means, Standard Deviations, and Critical Ratios for the Fascism Scale, Cross-Sectional Study 1961, of Santa Clara Student Populations.

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	333	126.8	19.14
Sophomores	230	119.8	20.05
Juniors	194	116.9	21.11
Seniors	209	117.2	20.30

Critical Ratios for Cross-Sectional Study

1961

Class	Freshmen	Sophomores	Juniors	Seniors
		4.18	5.39	5.50
			1.43	1.34
				0.15

Table V-13

Means, Standard Deviations, and Critical Ratios for the McClosky, Classical Conservatism Scale, Cross-Sectional Study 1961, of Santa Clara Student Populations.

1961 Cross-Sectional Study

Class	N	M	S.D.
Freshmen	336	3.8	1.94
Sophomores	235	3.5	1.83
Juniors	198	3.3	1.77
Seniors	210	3.7	1.85

Critical Ratios for Cross-Sectional Study

1961

Class	Freshmen	Sophomores	Juniors	Seniors
		2.14	3.35	1.02
			1.20	0.99
				2.13

Table V-14

Trends of Change for the Cross-Sectional Study of Santa Clara Students 1959 and 1961.

Table No.	Measure	Institutional Goals	Year	t-Scores for Class Standings Fr. to Soph.	Soph. to Jr.	Jr. to Sen.	Over all
1.	Inconsistency	Down	1959	-	-	+	-3.31
			1961	-3.86	-	+	-4.27
2.	Moralistic Perception	Down	1959	-3.24	-	-	-5.40
			1961	-6.97	-	-	-8.86
3.	Broad Deviation	Down	1959	-	-	-	-2.76
			1961	-	-	-	-
4.	Narrow Deviation	Down	1959	-	-	-2.05	-3.33
			1961	-4.25	+	-3.90	-8.37
5.	Rights and Liberties	Up	1959	+2.10	-	-	+
			1961	+2.08	+	-	+2.72
6.	Segregation	Down	1959	-	-	-	-
			1961	-	-	+	-
7.	Conservatism	Down?	1959	+2.40	-	-	+
			1961	-4.50	+	-	-3.53
8.	Dogmatism (Rokeach"D")	Down	1959	-3.96	-	-	-5.51
			1961	-6.72	-	-	-7.64
9.	Critical Thinking (Dressel "G")	Up	1959	+3.32	+	-	+4.12
			1961		+	-	
10.	Conservatism (Calif.PEC)	Down?	1959	+	-	-	-
			1961	-4.17	+	-	-3.30
11.	Ethnocentrism (Calif."E")	Down	1961	-3.81	-	+	-4.21
12.	Pre-Fascism (Calif."F")	Down	1961	-4.18	-	+	-5.50
13.	Conservatism (McClosky)	Down?	1961	-2.14	-	+2.13	-

Notes:

1) Blank spaces indicate that the test was not given.
2) + indicates the score increased.
- indicates the score decreased.
3) The values reported are critical ratios: t of 1.96 is significant at the .05 level; t of 2.58 is significant at the .01 level.
4) When no figure is given, the change was not significantly significant.
5) The "goals" column indicates the direction of change presumably desired by the university and its faculty.
6) The "table" column refers to the table in which full statistics are presented.

In the table above, changes on all measures over different periods of the university experience are summarized. It will be remembered that in 1959, the tests were held in September, while in 1961 they took place in May. Since this study is concerned with the impact of the university, which can hardly take place during the summer, classes are grouped together by years of university experience. Thus, sophomores in 1959 and freshmen in 1961 are both regarded as having one year of college experience.

From these tables, it appears that significant changes take place in the first two years of attendance at Santa Clara. During the freshman and sophomore years, about half the changes found are statistically significant; during the junior year only one measure reaches the .05 level of confidence, while during the senior year two measures are significant. However, discussion of our longitudinal findings will demonstrate that cross-sectional analysis alone can yield somewhat misleading results.

2. The Longitudinal Study.

In this section, scores of students who were at Santa Clara for both the first and second testings are presented and compared. It has been suggested (for example by Corey, 1936) that longitudinal studies are more reliable. They exclude changes due to the dropping out of certain students (often inferior ones) and also eliminate the possibility of being misled by accidental differences between classes. As will be seen, the longitudinal results are somewhat different from the cross-sectional ones. Means, standard deviations and critical ratios for five groups are presented: seniors tested in the fall of 1959 and again just before graduation; freshmen, sophomores and juniors tested in the fall of 1959 and again 20 months later; and freshmen tested on entry in the fall of 1960 and retested with the rest of the school in May, 1961. The results for each measure are presented in an individual table, and trends and significant relationships found are summarized in Table V-27.

Table V-15

Means, Standard Deviations, and Critical Ratios for the Inconsistency Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	203	84.0	39.06	2.84
Sophomores	61		73.3	37.01	
Sophomores	59	182	78.8	39.83	2.73
Juniors	61		68.3	33.83	
Juniors	59	205	75.3	33.52	1.05
Seniors	61		71.8	34.42	
Seniors	59	206	75.6	31.76	.26
Seniors	60		76.5	36.29	
Freshmen	60	321	100.2	40.40	5.15
Freshmen	61		84.8	35.81	

Table V-16

Means, Standard Deviations, and Critical Ratios for the Moralistic Perception Scale, Longitudinal Studies of Santa Clara Student Populat[illegible].

Class		N	M	S.D.	t
Freshmen	59	202	18.2	8.21	5.83
Sophomores	61		13.9	6.40	
Sophomores	59	182	15.9	7.37	2.86
Juniors	61		13.8	6.71	
Juniors	59	204	14.9	6.47	2.90
Seniors	61		13.0	7.07	
Seniors	59	206	15.0	6.76	.47
Seniors	60		14.7	7.50	
Freshmen	60	320	21.3	7.66	5.42
Freshmen	61		18.2	6.98	

Table V-17

Means, Standard Deviations, and Critical Ratios for the Broad Deviation Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	207	7.4	4.58	.29
Sophomores	61		7.3	4.16	
Sophomores	59	182	6.5	4.41	.74
Juniors	61		6.8	4.57	
Juniors	59	205	6.9	4.66	.08
Seniors	61		7.0	4.71	
Seniors	59	206	6.5	4.55	3.26
Seniors	60		5.1	3.75	
Freshmen	60	322	7.9	4.67	1.22
Freshmen	61		7.5	4.31	

Table V-18

Means, Standard Deviations, and Critical Ratios for the Narrow Deviation Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	207	5.4	4.69	3.52
Sophomores	61		4.1*	2.44*	
Sophomores	59	182	4.8	2.20	2.36
Juniors	61		4.2*	2.62*	
Juniors	59	205	4.6	2.46	5.55
Seniors	61		3.3*	2.28*	
Freshmen	60	322	5.5	2.38	2.32
Freshmen	61		5.0	2.44	

*These figures, owing to technical difficulties of analysis, are based on the 1961 Cross-Sectional sample. Close relationships between the Cross-Sectional and Longitudinal groups on other measures suggest that such a substitution will not distort the results unduly.

Table V-19

Means, Standard Deviations, and Critical Ratios for the Rights and Liberties Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	207	43.5	5.34	0.04
Sophomores	61		43.5	5.49	
Sophomores	59	182	44.1	5.80	0.38
Juniors	61		44.4	6.55	
Juniors	59	205	43.6	5.33	0.91
Seniors	61		44.1	5.71	
Seniors	59	206	43.6	5.71	2.23
Seniors	60		42.3	5.71	
Freshmen	60	322	42.4	5.42	0.31
Freshmen	61		42.5	5.86	

Table V-20

Means, Standard Deviations, and Critical Ratios for the Segregation Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	204	23.0	5.27	0.96
Sophomores	61		22.5	4.83	
Sophomores	59	182	23.2	5.59	2.36
Juniors	61		21.8	5.14	
Juniors	59	205	23.2	5.18	0.70
Seniors	61		22.9	5.02	
Seniors	59	206	22.8	4.97	0.59
Seniors	60		23.1	5.04	
Freshmen	60	322	23.7	4.93	0.60
Freshmen	61		23.4	5.17	

Table V-21

Means, Standard Deviations, and Critical Ratios for the Conservatism Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	203	33.4	4.43	0.44#
Sophomores	61		33.2#	4.69#	
Sophomores	59	182	34.4	4.67	0.79#
Juniors	61		34.0#	4.97#	
Juniors	59	205	33.5	4.32	0.00#
Seniors	61		33.5#	4.87#	
Seniors	59	206	33.5	4.39	0.51
Seniors	60		33.7	4.26	
Freshmen	60	321	34.9	4.48	0.32
Freshmen	61		35.0	4.37	

#These figures, owing to technical difficulties of analysis, are based on the 1961 Cross-Sectional sample. Close relationships between the Cross-Sectional and Longitudinal groups on other measures suggest that such a substitution will not distort the results unduly.

Table V-22

Means, Standard Deviations, and Critical Ratios for the Dogmatism Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	± t
Freshmen	59	203	166.8	21.03	4.05
Sophomores	61		158.3	21.44	
Sophomores	59	181	158.3	21.67	0.96
Juniors	61		156.0	24.19	
Juniors	59	207	158.2	22.13	1.10
Seniors	61		155.8	22.68	
Seniors	59	202	155.4	21.3	0.62
Seniors	60		156.8	22.73	
Freshmen	60	320	169.9	29.42	0.41
Freshmen	61		170.8	22.50	

Table V-23

Means, Standard Deviations, and Critical Ratios for the Dressel, Form G, Test of Critical Thinking, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	209	34.1	7.74	5.35
Sophomores	61		37.8	6.34	
Sophomores	59	185	35.9	8,08	3.26
Juniors	61		38.5	7.24	
Juniors	59	206	36.9	7.39	1.23
Seniors	61		37.8	7.39	
Seniors	59	206	36.5	7.65	2.18
Seniors	60		38.1	7.02	

Table V-24

Means, Standard Deviations, and Critical Ratios for the California Political-Economic Conservation Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	59	207	64.1	7.36	3.35
Sophomores	61		61.7	7.41	
Sophomores	59	181	64.4	7.10	2.04
Juniors	61		62.6	9.12	
Juniors	59	207	64.2	7.95	2.13
Seniors	61		62.5	7.99	
Seniors	59	203	62.7	8.60	0.48
Seniors	60		63.1	7.97	

Table V-25

Means, Standard Deviations, and Critical Ratios for the F Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	60	319	131.1	19.78	2.67
Freshmen	61		127.0	19.20	

Table V-26

Means, Standard Deviations, and Critical Ratios for the E Scale, Longitudinal Studies of Santa Clara Student Populations.

Class		N	M	S.D.	t
Freshmen	60	321	94.7	24.02	1.40
Freshmen			97.4	23.83	

Table V-27

Trends and Significant Critical Ratios Found in the Longitudinal Study for Various Measures Based on the Santa Clara University Population.

		1964	1963	1962	1961	1960
Class of:		1964	1963	1962	1961	1960
Tested: (September)		1960	1959	1959	1959	1959
Retested: (May)		1961	1961	1961	1961	1960
Interval:		8 months	20 months	20 months	20 months	8 months
Period of college experience:		Freshman year	Freshman & Sophomore years	Sophomore & Junior years	Junior & Senior years	Senior year
Table Measure	Institutional Goals					
15. Inconsistency	down	-5.15	-2.84	-2.73	-	+
16. Moralistic Perception	down	-5.42	-5.83	-2.86	-2.90	-
17. Broad Deviation	down	-	-	+	+	-3.26
18. Narrow Deviation	down	-2.32	-3.52	-2.36	-5.55	
19. Rights and Liberties	up	+	=	+	+	-2.23
20. Segregation	down	-	-	-2.36	-	+
21. Conservatism	down?	+	-	-	=	+
22. Dogmatism (Rokeach D)	down	+	-4.05	-	-	+
23. Critical Thinking (Dressel)	up		+5.35	+3.26	+	+2.18
24. Conservatism (Calif. PEC)	down?		-3.35	-2.04	-2.13	+
25. Pre-fascism (Calif. F)	down	-2.67				
26. Ethnocentrism (Calif. E)	down	+				

Notes:

1) + indicates that the score increased through time.
   - indicates that the score decreased through time.
   = indicates that the score remained constant through time.
2) The figures given are critical ratios: t of 1.96 is significant at the .05 level.
   t of 2.58 is significant at the .01 level.
3) Where no figure is given, the change was not statistically significant.
4) The "table" column refers to the table in which full statistics are presented.
5) The "goals" column indicates the direction of change presumably desired by the university and its faculty.

Table V-27 indicates that statistically significant changes in beliefs and attitudes are found at all stages of the university experience, although there is more discernable change in the lower than in the upper division. The apparent inconsistency between the cross-sectional and longitudinal findings on a number of measures has occurred because there seems to have been a general improvement in 1961 over 1959. Thus, the means on the Inconsistency Scale for the three upper classes in 1959 were 79.9, 74.1 and 75.5; in 1961 they were 72.8, 69.5 and 72.1. For the Test of Critical Thinking, comparable figures were 35.8, 36.4 and 36.3 in 1959; 37.5, 38.0, and 37.5 in 1961. This pattern can be detected in a number of the measures. This apparent general improvement in 1961 over 1959 presented something of a problem in interpretation.

First, it should be noted that the testing in 1959 was administered at the beginning of the academic year; in the 1961 testing, the test battery was given at the end of the year. Thus, some improvement might have been expected, though hardly enough to explain the performances on the Critical Thinking Test, where 1961 sophomores excelled 1959 seniors. Second, it was hypothesized that students who dropped out, and were therefore excluded from the longitudinal study, might have been of generally inferior quality, and that inclusion of them distorted the cross-sectional findings. However, a comparison of the corresponding cross-sectional and longitudinal means reveals that there is very little difference in the performance of a group whether students who will drop out in the next year or two are included or excluded. A third explanation for the improvement suggested that it was due to practice effect; but most of the scales used measured attitudes rather than abilities. It seemed safe to conclude from campus comment that after taking the Test of Critical Thinking in Ethics once, few students had any accurate idea of what it was intended to measure. Thus, the notion of conscious self-improvement must be discarded. On the only pure ability test employed, the measure of Critical Thinking, the author states that there is no practice effect over a two month period (Dressel, 1954, p.202). The only remaining explanation appeared to be that the quality of students at Santa Clara is improving. No independent documentary of statistical evidence to support this view could be found, but with the expanding demand for places in college it seems plausible, and in our opinion, is the only tenable hypothesis which will explain the pattern revealed by our findings.

3. The Impact of the University: What Direction, When, and How Much?

We return now to the original hypothesis developed in chapter two, applying to each the findings obtained from the relevant tests. Each hypothesis can be dealt with at this point only insofar as it concerns the nature and extent of changes; comparisons with other institutions will be made in a later section.

Experience at a Value-Oriented University Tends to Change Student Beliefs and Attitudes in the Desired Direction. The Deviation scales were used to test this hypothesis. Both types of deviation are found to decline rather consistently throughout the university experience. The senior year reveals the only statistically significant longitudinal improvement in Broad Deviation. On entering the university, students appear to be better acquainted with what the Church prohibits than with what it permits--Broad Deviation scores are considerably lower (allowing for the number of scale items) than Narrow Deviation ones. The most impressive change subsequently takes place in Narrow Deviation. Thus the overall effect of education here appears to be a broadening rather than a narrowing of ethical norms. Students become less puritanical, while at the same time come more into conformity with the teachings of the Church.

A Value-Oriented University Improves the Critical Thinking Abilities of its Students. Scores on the Test of Critical Thinking, Form G, improved significantly overall. Change was most considerable in the lower division. Longitudinally, all the groups tested improved, but in the junior to senior comparison year the change was not significant. The cross-sectional results indicated slight declines, in one case during the junior and in the other during the senior year.

A Value-Oriented University Increases the Capacities of its Students for Critical Thinking in Ethics. The Inconsistency Scale was the measure used here. Generally, the trend in inconsistency is downward, i.e., toward greater consistency. Again, the changes are sharpest in the lower division. Both the cross-sectional and the longitudinal studies, using different groups, revealed slight reversals of this trend during the senior year.

A Value-Oriented Education Tends to Produce Inability to Handle Factual Propositions Relating to the Values. The measure used for this hypothesis was Moralistic Perception. At no point during the university experience does an increase in Moralistic Perception appear to take place; the decline, which is sharpest at the lower division levels, is statistically significant in all except the senior year, and very significant during the freshman year.

A Value-Oriented University Makes Students More Authoritarian. The measures used to test this hypothesis were the Rokeach Dogmatism Scale, the California F (pre-fascism) Scale, and the Santa Clara Rights and Liberties Scale. The results follow a pattern. Cross-sectionally, D scale scores declined at all levels, but most significantly during the freshman year; longitudinally, the decline is less marked, and actually, the D Scale scores show an increase during the senior year. The only other increase in D was found, rather incomprehensibly, in the performance of the 1960-1 freshman group. The F scale, which was used longitudinally only for this same group, shows a significant decline for it; cross-sectionally, F declines most strongly amongst freshmen and sophomores; the decline tapers off with college experience, and becomes a very small increase after the senior year. The Rights and Liberties scale shows an overall improvement in tolerance, most marked in the lower division. Both Senior groups, however, declined in their performance on this measure, in the longitudinal case to a significant extent.

The general conclusion seems clear--that education here decreases dogmatism and increases tolerance, until the senior year, when both trends become insignificant.

Education at a Catholic University Produces a Decrease in Ethnocentrism. The measures used were the California Ethnocentrism Scale and the Santa Clara Segregation Scale. Longitudinally, the only group tested with the California E Scale were the freshmen entering in 1960. Contrary to expectation, their mean score increased slightly in 1961, although it declined on the Segregation Scale. Cross-sectionally, both measures showed an overall decline in racial prejudice, which reached statistical significance over the middle years of college. Changes at the upper division level are less marked, and scores on the Segregation Scale increased slightly for the senior classes of both 1960 and 1961.

Education at a Catholic University Makes Students More Conservative, Less Liberal. Three measures of conservatism were used, the California Political-Economic Conservatism Scale, McClosky's Classical Conservatism Scale, and the Santa Clara Conservatism Scale. As has been mentioned, these measures failed to correlate with one another at the expected levels. The P.E.C. scale, viewed cross-sectionally, uncovered only one significant change, which occurred during the freshman year in the direction of greater liberalism. Longitudinally, however, changes for three classes over the 20 month period all attained statistical significance and all were in the liberal direction. The Classical Conservatism Scale was used in 1961 only. Declines in conservatism between freshmen and sophomores were significant, and those between sophomores and juniors approached significance at the .05 level. The seniors, however, appeared to be more conservative than either sophomores or juniors. The Santa Clara Conservatism Scale showed significant declines in Conservatism between freshmen and other classes viewed cross-sectionally, although longitudinally none of the changes reached the .05 level of significance, while the 1960 seniors showed an increase in conservatism during their final year at the school.

Thus, it appears that the university produces changes in the desired and/or liberal direction, as measured by all the instruments used. The change appears to be most concentrated in the freshman year, to continue into the sophomore year, then to taper off and finally, in the cases of inconsistency, authoritarianism, ethnocentrism and conservatism, to be reversed during the senior year, but only to an insignificant extent.

4. A Comparison of the Impact of the University.

College students, particularly those enrolled in lower division psychology courses, are the traditional testing ground for measurements of all kinds. Only a small part of these activities, however, have been directed towards an examination of college impact. In many the major interest has been in the development of the testing instruments themselves, and the clarification of the concepts which underlie them. For this reason, performance of a number of college samples is usually available on any well known instrument, but only rarely are the same students retested at a later time in their college careers, or a group of upper division students tested in a way comparable to the lower division ones. Data on the impact of college, therefore, are virtually confined to two measures used in our study, Dressel's Test of Critical Thinking and the California Ethnocentrism scale.

Table V-28

Comparative Data on Changes in Critical Thinking for Various Groups.

Institution:	Group Tested:	Numbers		Means		Sigmas		Interval	Mean
		Test:	Retest:	Test:	Retest:	Test:	Retest:	(months)	gains:
Santa Clara	Freshmen '59	209	209	34.1	37.8	7.74	6.34	20	3.7
Santa Clara	Seniors '59	206	206	36.5	38.1	7.65	7.02	8	1.6
Two colleges above 60th percentile on ACE national norms	Freshmen '52	198	154	32.6	36.4	7.24	6.86	8	3.8
Three colleges in 40th - 60th percentile on ACE national norms	Freshmen '52	783	657	28.9	32.8	7.48	7.43	8	3.9
Michigan State U.	Male Freshmen '58	1124	1124	32.0	36.6	6.88	6.62	8	4.6
Michigan State U.	Female Freshmen '58	1095	1095	31.9	36.1	6.99	6.92	8	4.2

Note:
Data on the unnamed colleges are drawn from Dressel (1953, p. 13).
Data on Michigan State University are from Lehmann & Ikenberry (1959,p.72).

The table above seems to indicate that critical thinking increases less at Santa Clara than at other institutions;though these data must be interpreted with some caution. In the comparative data from Dressel and Mayhew, drop-outs are unaccounted for, and it is possible that some of the apparent improvement resulted from the elimination of the least able students between testings. Dressel and Mayhew say that improvement in critical thinking is greatest in the early years of college, a finding confirmed by our own data. The only eight month period for which data was available at Santa Clara was the senior year. However, it appears that critical thinking increases less at Santa Clara during the freshman and sophomore years taken together than it does at other institutions in the freshman year alone. Comparison of the entering freshman means indicates that Santa Clara students are superior on entry to those tested elsewhere. This is confirmed in a comparative study of scholastic aptitude (Darley) conducted in 1952, which found that Santa Clara ranked twenty-first among 200 institutions.

Table V-29

Comparative Data on Changes in Ethnocentrism for Various Groups.

Institution	College experience	N	Mean		Sigma		Type of Comparison	Interval	Mean Change
			Test	Retest	Test	Retest			
Santa Clara	On entry, 1960	321	94.7	97.4	24.0	23.8	Longitudinal	8 months	+2.7
Santa Clara	On entry, 1961	335	97.2		23.9		Cross-Sectional	2 years	-10.5
	3 years, 1961	193		86.7		21.8			
Santa Clara	On entry, 1960	321	94.7		24.0		Cross-Sectional	4 years	-6.0
	4 years, 1961	209		88.7		22.2			
San Jose State College	Pre-entry, 1953	111	92.6	76.8	23.7	20.8	Longitudinal	2 years	-15.8
		232	92.1	80.5	24.4	22.4		2 years	-11.6
San Jose State College	On entry, 1952:								
	Males:	137	92.0	77.1	23.0	25.3	Longitudinal	4 years	-14.9
	Females:	134	87.0	66.4	26.0	25.2	Longitudinal	4 years	-20.6

Note:
Comparative data for San Jose State College are drawn from two articles by Plant, 1958.

While none of the comparisons of performance on the California Ethnocentrism scale, 30 item version, given in the table above are exactly equivalent, it seems clear that the University of Santa Clara does not produce a decline in ethnocentrism to anything like the same extent as its neighbor. This may be because of the very small Negro enrollment—though there are a number of oriental students who seem well integrated into the life of the campus—or because of a more moderate approach to race problems which some may think characterises the faculty at Santa Clara. Speakers on behalf of integration have appeared on the campus, and at least one faculty member has advocated student action in this cause, but the crusading fervor and participation in freedom rides which have characterized some campuses in the area has been absent. There seems little question but that the official stand of the Church is against racial discrimination, yet the comparatively minor changes in scores on the E scale show that the university has little effect in this area.

Data on other measures in this study have not been found. Webster (1956) reports an F scale test-retest correlation of .57, with a critical ratio of 14.7 for freshmen and seniors at Vassar. This indicates a more extensive change in this variable than is present at Santa Clara, where the cross-sectional study yields no critical ratio higher than 5.5. Data on test-retest scores for the Dogmatism scale will be higher than 5.5. Data on test-retest scores for the dogmatism scale will be available shortly for San Jose State College (Plant, Contract SAE 7666). McClosky's Classical Conservatism Scale is also being employed by the Center for the Study of Higher Education at Berkeley. Thus, further yardsticks by which to interpret the present findings should become available.

5. Entering Students at Santa Clara: Some Comparisons.

The impact of any institution is conditioned by the material with which it has to work. As a context for our findings about Santa Clara, and to provide a basis for further possible comparisons with other colleges, comparative data are presented here on the performance on various measures of students at different institutions.

Table V-30

	Incon.	M.Per.	B.Dev.	N.Dev.	R.& L.	Seg.	Conserv.
S.J.S.C. All Freshmen '59							
N:	446	448	452	453	451	446	444
M:	84.6	16.8	13.5	4.1	44.4	22.2	32.5
S.D.:	34.9	7.0	4.7	2.1	5.1	4.7	4.1
S.J.S.C. Male Catholics '59							
N:	43	45	45	45	44	42	43
M:	87.2	16.5	11.9	4.7	41.6	21.8	33.5
S.D.:	35.4	8.0	5.0	2.5	4.8	4.3	3.6
Coalinga J.C. All Freshmen '59							
N:	191	196	193	196	195	196	195
M:	96.5	11.9	13.7	4.2	42.3	23.4	33.8
S.D.:	33.4	4.2	4.1	2.1	5.3	5.1	4.2
Coalinga J.C. Male Catholics '59							
N:	19	19	19	19	19	19	19
M:	103.8	11.4	14.7	4.8	42.9	24.3	33.9
S.D.:	37.7	3.1	3.8	1.8	4.1	4.9	3.3
Santa Clara University All Freshmen '59							
N:	286	285	290	290	290	286	285
M:	85.9	18.5	7.6	5.2	43.1	23.5	33.4
S.D.:	39.75	7.86	4.61	4.17	5.47	5.12	4.43

Note:
All Subjects in the above table, except where noted, were freshmen entering in 1959. At San Jose State College the samples were drawn from an introductory course in Psychology.

It appears that students entering Santa Clara tend to be more inconsistent and moralistically perceiving than those entering the neighboring state college, but less so than our junior college sample. It must be remembered that both these scales were designed to "trap" Catholic subjects. The most impressive contrast occurs on the Broad Deviation Scale. From these figures it appears that entrants to Santa Clara are far better acquainted with Church doctrines than are Catholics who choose one of the other institutions. From this point of view, it is precisely those Catholics who need the influence of the university who do not choose to receive it. Narrow Deviation scores, on the other hand, are higher for entrants to Santa Clara than for any other group, reflecting a greater "puritanism" or narrowness of moral outlook which is perhaps associated with greater acquaintance with Church teaching on moral matters. A respondent who always chose the more moralistic or punitive answer would accumulate a low score on Broad Deviation, a high one on Narrow Deviation. On the three political scales, there is no conspicuous difference between the various groups.

Table V-31

Scores of Various College Groups on the Dogmatism Scale.

Source:	Institution:	Group Tested:	N:	M:	S.D.:
Santa Clara Study	Santa Clara Univ.	FFeshmen 1959	287	166.0	21.6
Santa Clara Study	Santa Clara Universi	Freshmen 1959	320	169.9	29.4
Plant *et al*(1959)	San Jose State College	Applicants, 1958 M:	1007	159.7	25.3
		F:	1343	155.3	26.2
Santa Clara Study	San Jose State College	Freshmen 1959	140	154.5	25.9
		Male Roman Catholics only:	14	149.4	17.7
Rokeach (1960)	Ohio State Univ.	Not described	22	142.6	27.6
			28	143.8	22.1
			21	142.6	23.3
			29	141.5	27.8
			58	141.3	28.2
Lehmann, Ikenberry (1959)	Michigan State Univ.	Freshmen, 1958 M:	1436	168.2	25.4
		F:	1310	163.6	25.5
		Male Catholics :	262	174.1	—

From this table, it appears that students who enroll at Santa Clara tend to be more dogmatic than those who enter San Jose State College or Ohio State University, but about the same as those who enter Michigan State University. One may speculate as to whether the different results in Michigan are due to geographical-cultural influences, or to contrasting admissions criterion. Michigan male Catholics are shown here as more dogmatic than non-Catholics, a finding confirmed by Rokeach (1960, p.110). Our own contrary finding at San Jose State College should probably be dismissed because of the small number of cases.

Comparative data for the F scale, the other measure of authoritarianism used, are less satisfactory. Per item means, rather than total scores are reported, because the length of the scale has varied at certain times. The status of the student groups are not reported in any detail by Adorno et al, the source of the information. Although the data are about ten years older than ours the comparisons reveal a certain pattern.

Table V-32

Mean Per Item Scores of Various College Groups on the F Scale.

Source:	Institutions:	Group:	Mean Per Item Score:
Santa Clara Study	Santa Clara	Freshmen, September 1960, on entry	4.37
		Freshmen, May 1961, after one year	4.23
		Sophomores, May 1961, after two years	4.00
		Juniors, May 1961, after three years	3.90
		Seniors, May 1961, after four years	3.91
Adorno et al(1950)	University of California	52 public speaking class men	3.72
		140 public speaking class women	3.94
		57 summer session men (some above college age)	3.82
	University of Oregon	47 female undergraduates	3.32
	George Washington University	132 undergraduate women	3.51

These findings confirm those based on Dogmatism Scale, in showing that Santa Clara students score higher on authoritarianism than students elsewhere. Figures for San Jose State College students, employing the same thirty item F scale as in our research will be available shortly (Plant, SAE Contract 7666).

The format of the California Political Economic Conservatism Scale varied so much that presentation of comparative means does not seem worth while. Calculation of per item means for the groups whose F scale performance is reported above reveals no marked contrast with Santa Clara. In the course of our research, the fifteen item P.E.C. Scale was administered to 137 freshmen in an introductory Psychology course at San Jose State College. A mean score of 62.7 was discovered which may be compared to the mean for freshmen entering Santa Clara of 64.2, suggesting that Santa Clara entrants are slightly more conservative.

6. The Santa Clara Student Population.

The Santa Clara University student population is rather homogeneous. The background information on students was obtained from administrative offices of the university. Data were collected, principally from two forms: (1) Application for Admission to Undergraduate Colleges, and (2) the student's Permanent Record Card. Both forms are considered to contain reliable information. The data contained in the Application for Admission form is verified through individual interviews, high school transcripts, and character reference letters. Items contained in the Permanent Record Card are carefully checked by the Office of the Registrar of the University. Data were collected for the whole school in 1959 and for the freshmen class entering in 1960. The figures are presented in Appendix A-1.

The Area of the Major. About 26 per cent of Santa Clara Students major in one of the three Engineering specialties, and about 31 per cent in business administration. Of the remaining students tested in 1959, about 14 per cent majored in the natural sciences and mathematics, about 16 per cent in humanities, and approximately 11 per cent in the behavioral sciences.*

Religious Preferences. The homogeneity of the student population is probably most striking in the area of its religious preferences. Some 94 per cent of students are Roman Catholic with slightly more than 4 per cent divided between various Protestant denominations, and about 1.5 per cent of non-Christians, agnostics, and others. (See Appendix A-2).

College Residence. Santa Clara is primarily a boarding school. About 68 per cent of the 1959 total student population resided in university dormitories while some 32 per cent were non-resident, day students. For freshmen of 1960, the resident dormitory group constituted about 79 per cent of the total freshmen group, while slightly more than 20 per cent of freshmen lived outside university housing facilities, The higher proportion of freshmen lived outside university housing facilities. The higher proportion of freshmen who reside in dormitories may be explained through university policies which demand that all freshmen who do not live with their families stay in university dormitories on campus, while upperclassmen may reside in private homes or co-op houses which are supervised by the office of the Dean of Men.

Age and Sex. At the time of this study, the university was an all-male institution. It became co-educational with the beginning of the acadaemic year 1961-62.

About 84 per cent of students are in the 18 - 21 age group, about 9 per cent are between the ages of 22 and 25, while only about 2 per cent are older than 25 and 5 per cent are less than eighteen years of age. (See Appendix A-3).

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*Humanities include philosophy, English, foreign languages, and history while economics, political science, and sociology were given the label of behavioral sciences.

High School Education. About 71 per cent of students attending Santa Clara in 1959 graduated from Catholic high schools. Twenty-six per cent have completed a public high school curriculum. Figures for freshmen entering Santa Clara in 1960 are comparable with a slight increase noted of graduates of public high schools (about 30 per cent) and a slight decline in Catholic high school graduates (68 per cent). It is likely that the peculiar value-orientations and attitude commitments found among Catholic students at Catholic colleges and universities may be a carry-over from the religious milieu of Catholic high schools. (see Appendix A-4).

Parental Religious Preference. The religious homogeneity of the population under study is further re-emphasized when one considers the religious preferences of parents of Santa Clara students. Seventy-nine per cent of students had both parents Catholic, with about 16 per cent of mixed marriages, and some 5 per cent of students whose neither parent was a Catholic. (See Appendix A-8)

Income Level of Father. This information is available only for 1960 Santa Clara Freshmen. Students were asked to estimate the income group to which their father belonged. Ten per cent of freshmen indicated that their father's incomes were below $5,000.00 per annum. About 44 per cent of freshmen estimated their fathers' income to be ten thousand dollars per year or more. About 10 per cent of students put their fathers' income at thirty thousand dollars per year or more and about 35 per cent of respondents estimated that their fathers' income fell between five and ten thousand dollars per year. Many did not answer this question, and the reliability of the responses given cannot be known. (See Appendix A-5).

Occupation of Father. As a private school with a rather high tuition, Santa Clara tends to draw students from the upper-middle and upper social economic strata. This is reflected in percentages of four occupational groups (independent businessman, medical professions, executives and lawyers) which comprise about 42 per cent of all paternal occupations. Students whose fathers belong to the semi-skilled and skilled categories constitute about 13 per cent of the student body, while about 28 per cent of fathers of Santa Clara students work in sales or occupy clerical and "white collar" positions. (See Appendix A-6).

Educational Level of Father. About 37 per cent of fathers of Santa Clara students of 1959 terminated their education at the high school level while some 18 per cent completed grade school only. A great majority of the former completed a Catholic high school. About 4 per cent of fathers had some college experience while some 37 per cent completed four years of college with some 6.5 per cent going on for graduate work. Out of those who went to college more than half attended a non-Catholic institution. (See Appendix A-7).

Ethnic Origins of Parents. These data were obtained from the Application for Admission Form which contained a question about the nationality origins of the father and mother of the applying student.

Parents of slightly less than half of the university students identified themselves as Americans with a negligible number claiming Canadian origin. The remaining half of the student population had parents belonging principally to three broad ethnic categories: "Franco-Italians" (primarily Italians, Portugese, and Spanish) about 19 per cent, West European (including England) about 13.5 per cent, and Irish comprising abut 11 per cent of parents of Santa Clara students.

The parents of Slavic descent made up only about 2 per cent of the total while the Latin Americans accounted for some 3 per cent of the total. (See Appendix A-9).

Student Home Residences. The great majority of students, about 93.7 per cent, claim their permanent residence west of the Rock Mountains. About 3.7 per cent reside outside the continental United States with the remaining 2.6 per cent residing east of the Rockies. About 49 per cent of students make their residence in the San Francisco Bay Area. (See Appendix A-10.)

Data on the Freshman group entering in 1960 suggests that, except where noted, they resemble the 1959 very closely. Thus the profile of a Santa Clara student constructed on the basis of the background information would be as follows:

> He is a male, in the 18-21 age group, single, and a Catholic. He boards at the university and selects professional or a pre-professional training rather than majoring in humanities. He comes from a Catholic high school. Both his parents are Catholic, reside West of the Rocky Mountains, and are of established American origin. His father completed either high school or college and belongs to the middle or upper-middle occupational group with an income of just over 10,000 dollars per year.

7. Correlations Between the Established Measures Used.

First, correlations were obtained between the three measures of intellectual ability used in the study: Dressel, Test of Critical Thinking, Form G; the College Entrance Examination Board total scores; and the grade point average accumulated during one year at Santa Clara. The Test of Critical Thinking correlates .599 with the C.E.E.B. total score. This confirms the finding of Dressel & Mayhew, who report a .60 coefficient (1954, p.199). They go on to say, however, that, "Correlations between the Test of Critical Thinking and grades commonly equalled or excelled the correlations of academic aptitude tests such as the ACE Psychological Examination with grades." (p.200). Our research shows the Test of Critical Thinking correlating .383 with GPA, whereas the CEEB correlates with GPA .487. The Director of Guidance at the University reports a correlation of .674 between CEEB and GPA, based on freshman year grades of a sample of 100 students entering in 1957 and 1958. A possible explanation of this discrepancy is that our figures for grade point average were based on the year immediately before the study, without distinction as to class.

Table V-33

Correlations of Ability Measures and Tests of Social and Political Attitudes.

	Dressel, Form G Test of Critical Thinking	College Entrance Examination Board (T)	Grade Point Average (1 year)
	n=976	n=775	n=830
Rokeach Dogmatism Scale	-.243	-.174	-.183
California F (prefascist) scale	-.344	-.299	-.313
California E (ethnocentrism)	-.339	-.305	-.244
California P.E.C. Scale	-.008	-.053	-.036
McClosky, Classical Conservatism	-.261	-.302	-.231

Table V-33 shows the correlations of five measures of social and political attitude with three measures of ability, based on 1,011 students tested at Santa Clara in May, 1961. As noted in the previous chapter, the P.E.C. scale fails to correlate significantly with other measures. The remaining four tests of attitude all correlate negatively with each measure of ability at a level significantly different from zero. Adorno et al have reported rather similar correlations with the Otis Higher Form Intelligence Test:-.16 with the P.E.C. scale, -.22 with the E scale and -.48 with the F scale. Christie (1954) has argued that F scale performance is related to intelligence. Lehmann and Ikenberry (1959) report correlations from -.18 to -.26 between the Dogmatism scale and Form G. Rokeach has reported correlations of from .00 to -.30 between the Dogmatism scale and various tests of intellectual ability; and -.15 between Dogmatism and the college Qualification Test. At San Jose State the D scale was found to correlate -.20 with the A.C.E. Psychological Examination (Plant, Minium & Myers, 1959.) Dressel (1953, p. 10) reports an average correlation between Critical Thinking, Form G, and authoritarianism, as measured by the Inventory of Beliefs.(p.23.) Our findings tend to confirm these. McClosky (1958) reports a relationship between the Classical Conservatism Scale and Intellectuality; this is confirmed by our correlations.

Table V-34

Correlations of Many Various Measures of Social and Political Attitudes.*

Source:	Nature of Sample:	Correlations:					
		D-E	D-F	E-F	D-PEC	E-PEC	F-PEC
Santa Clara Study	1,000 SCU students	.51	.69	.68	.15	.17	.19
Adorno et al (1950, p. 179)	57 male students					.48	
	23 groups, n=1568					.57	
____________(p.263)	57 male students			.58			.43
	26 groups, n=2150			.73			.52
Rokeach (1956, p.24)	7 college groups,	.31	.54	.56			
	ranges.	.53	.77	.64			
Pettigrew (1958)	University of North Carolina students		.82				
Plant, Minium, Myers (1959)	San Jose State College:						
	-1007 males	.57	.75	.65			
	-1343 females	.61	.70	.70			
Rokeach (1960, p.122)	4 college groups				.11		.22
	Range				.28		.43
Santa Clara Study	137 San Jose State College freshmen				.07		

*It should be noted that different forms of the various scales were used in obtaining these correlations.

Table V-34 shows the correlations obtained between the California E, F, and P.E.C. scales and the Rokeach Dogmatism scale in this research along with some findings already reported elsewhere and presented here for purposes of comparison. Generally, our findings seem comparable to others, again with the exception of the P.E.C. scale which somehow fails for us to have its usual relationships. The breakdown in the relationship between E and PEC reported in 1950 may possibly be explained by changing social climates of opinion--Northern conservatives perhaps may be becoming more liberal on race issues. That the D and F scales correlate about as well in a Catholic environment as in any other is of some interest; whatever the nature of authoritarianism and its relationship to dogmatic theology, it appears that both scales behave in much the same way.

The McClosky Classical Conservatism Scale correlated .099 with the California P.E.C. Scale suggesting little except that conservatism is a very nebulous variable. The McClosky scale correlated with Rokeach Dogmatism .439, with the E scale .512, and with the F scale .690. The lower correlation with D than F is in line with the theoretical basis of these scales, since D is intended to measure all types of authoritarianism, while F concentrates on authoritarianism of the right. The level of the McClosky-Rokeach correlation suggests what seems likely--that at a Catholic school, dogmatism is much more often associated with right than left leanings in politics.

CHAPTER VI - CONCLUSIONS

We believe that our research justifies the following conclusions:

-Experience at a value-oriented university does reduce deviation from ethical and theological doctrines. However, students who choose such a university already conform to the desired norm to a considerably greater extent than students who did not. The area available for improvement as measured here is not therefore great. The most marked change was broadening of values. (Broad and Narrow Deviation Scales).

-A value-oriented university does improve the critical thinking abilities of its students. (Form G).

-A value-oriented university does increase the capacities of its students for critical thinking in ethics. However, the improvement takes place mainly in the lower division. (Inconsistency Scale).

-A value-oriented university does not tend to produce inability to handle factual propositions related to values. The scores for moralistic perception declined throughout the university experience, most sharply in the early years of college. (Moralistic Perception Scale).

-A value-oriented university makes students less authoritarian. However, the change is neither marked nor consistent. Students who choose a value-oriented university tend to be somewhat authoritarian when they come, and do not change significantly after their second year in college. (Dogmatism Scale, F Scale, Rights & Liberties Scale).

-Education at a Catholic university does produce a decrease in ethnocentrism. Entering students attending a neighboring state college do not differ widely on ethnocentrism from entering students at a Catholic institution.

-Education at a Catholic university makes students more liberal in social and political outlook, but not to any marked extent. (PEC Scale, Classical-Conservatism Scale, Conservatism Scale).

-Changes in attitudes and beliefs at a value-oriented university tend to take place during the first two years of college. In the last year there appears to be even a slight reaction against the previous direction of change.

-Changes in students' attitudes, beliefs and critical thinking abilities at a value-oriented university are small. Previous findings, that college experience has no great impact on students would seem to apply to this value-oriented university which certainly does not approach the category which Jacob has described as "institutions of peculiar potency".

Table A-1

Areas of the Major for All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

Major	All Students 1959		Freshmen 1960	
	N	%	N	%
Engineering	267	25.8	81	23.7
Business	318	30.8	95	27.8
Natural Science	124	12.0	56	16.4
Mathematics	18	1.7	10	2.9
Philosophy*	34	3.3	4	1.2
English	52	5.0	17	5.0
History	75	7.3	18	5.3
Foreign Language	2	.2	—	—
Political Science**	57	5.5	27	7.9
Sociology	7	.7	3	.9
Economics	48	4.6	10	2.9
Other & Undecided	30	2.9	19	5.6
No data	1	.1	1	.3
TOTAL:***	1033	99.9	341	99.9

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*Students at Santa Clara are required to take a prescribed number of Philosophy units. All students in the College of Arts and Sciences must take 21 units (nine of these are lower-division units).

**Political Science curriculum is recommended for pre-law students.

***Percent totals may not add up to 100.0 because of rounding off numbers.

Table A-2

Religious Preferences for All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

Religious Preference	All Students 1959		Freshmen 1960	
	N	%	N	%
Roman Catholic	975	94.4	319	93.5
Greek or Russian Orthodox	1	.1	—	—
Protestants (Lutheran, Episcopalian, Presbyterian)	23	2.2	6	1.7
Protestants (Baptist, Methodist, Congregational)	16	1.5	11	3.3
Evangelic Protestant (other)	3	.3	—	—
Mormon	1	.1	—	—
Jewish	1	.1	—	—
Atheists, Agnostics, no preference	7	.7	4	1.2
Non-Christian (other than Jews)	3	.3	—	—
Not known	2	.2	—	—
Blanks	1	.1	1	.3
TOTAL:	1033	100.0	341	100..

Table A-3

Age Composition of All Students at the University of Santa Clara(1959).

Age	All Students 1959 N	All Students 1959 %
16 yrs. or younger	—	—
17	3	.3
18	49	4.7
19	229	22.2
20	214	20.7
21	238	23.0
22	184	17.8
23	63	6.1
24	13	1.3
25	9	.9
26	8	.8
27 or older	23	2.2
TOTAL:	1033	100.0

Table A-4

High School Education for All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

Type of High School	All Students 1959 N	All Students 1959 %	Freshmen 1960 N	Freshmen 1960 %
Outside of United States	11	1.1	—	—
Bellarmine (Catholic)	174	16.8	48	14.1
St. Ignatius (San Francisco), Loyola(Los Angeles), Brophy (Arizona)	199	19.3	40	11.7
Other Catholic High Schools	364	35.2	144	42.2
Public High School	266	25.7	102	29.9
Private Non-denominational	8	.8	3	.9
Private Denominational, non-Roman Catholic	1	.1	—	—
Other and no data	10	1.0	4	1.2
TOTAL:	1033	100.0	341	100.0

Table A-5

Income Level of Fathers as Estimated by Santa Clara Freshmen, 1960.

Income Category	N	%
$ 000 - $ 2,999.00	6	1.8
3,000 - 4,999.00	28	8.2
5,000 - 7,499.00	62	18.2
7,500 - 9,999.00	58	17.0
10,000 - 19,999.00	87	25.5
20,000 - 29,999.00	30	8.8
30,000 and more	32	9.4
No data	38	11.1
TOTAL:	341	100.0

Table A-6

Occupational Status of Father for All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

Occupational Status of Father	All Students		Freshmen	
	N	%	N	%
Unskilled	21	2.0	—	—
Semi-skilled, Skilled	137	13.3	45	13.0
Clerical, White-collar	195	18.8	101	29.5
Sales	89	8.8	25	7.0
Farmers & Ranchers	37	3.5	14	4.0
Teachers	7	.7	2	.5
Owners of own business	147	14.2	35	10.0
Professors & Ministers	1	.1	5	1.5
Doctors & Vets	47	4.5	17	5.0
Managers, Executives, Bankers & Lawyers	238	23.0	68	20.0
Other	98	9.5	25	7.0
No data	16	1.6	9	2.5
TOTAL:	1033	100.0	346	100.0

Table A-7

Educational Status of Father for All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

EDUCATION OF FATHER		All Students		Freshmen	
Level	Type	1959		1960	
		N	%	N	%
Grade School		183	17.8	64	18.7
High School	Roman Catholic*	62	6.0	41	12.0
High School	not Roman Catholic	320	30.9	78	22.8
In College	Roman Catholic**	9	.9	1	.3
In College	not Roman Catholic	22	2.1	10	2.9
In College	University of Santa Clara	11	1.1	6	1.8
College Graduate	University of Santa Clara	47	4.5	17	5.0
College Graduate	Roman Catholic	60	5.8	28	8.2
College Graduate	not Roman Catholic	208	20.2	79	23.1
Graduate Work	University of Santa Clara	24	2.3	—	—
Graduate Work	Roman Catholic	22	2.1	—	—
Graduate Work	not Roman Catholic***	21	2.0	1	.3
No data		44	4.3	17	4.9
	TOTAL:	1033	100.0	342	100.0

Table A-8

Religious Preferences of Parents of Santa Clara Students

RELIGIOUS PREFERENCE OF PARENTS	All Students		Freshmen	
	1959		1960	
	N	%	N	%
Both Parents Catholic	815	79.0	260	76.2
Neither Parent Catholic	53	5.2	19	5.5
Father Catholic, Mother not	46	4.5	12	3.5
Mother Catholic, Father not	118	11.2	48	14.3
No data	1	.1	2	.5
TOTAL:	1033	100.0	341	100.0

Table A-9

Ethnic Origins of Parents of All Santa Clara Students (1959) and Santa Clara Freshmen (1960).

Ethnic Origins	All Students 1959				Freshmen 1960			
	Father		Mother		Father		Mother	
	N	%	N	%	N	%	N	%
American, Canadian, Hawaiian.......	490	47.4	510	49.4	164	48.1	171	50.2
"Franco-Italian" (Belgian, French, Italian, Portugese, Spanish, or Swiss)............................	198	19.2	200	19.4	67	19.7	66	19.4
Protestant Europe (Austrian, Dutch, German, Scandinavian)............	98	9.5	84	8.1	20	5.9	29	8.5
English, Australian, New Zealand...	40	3.9	37	3.6	22	6.4	14	4.1
Irish..............................	117	11.3	116	11.2	34	10.0	35	10.3
Slavic.............................	20	1.9	20	1.9	8	2.3	7	2.0
Mexican or Spanish American........	18	1.7	23	2.2	6	1.8	7	2.0
Other Latin American...............	13	1.2	14	1.4	--	--	--	--
Indo-Arabic........................	7	.7	7	.7	1	.3	1	.3
Oriental...........................	21	2.0	17	1.6	10	2.9	8	2.3
Other and no data..................	11	1.1	5	.5	9	2.6	3	.9
TOTAL:	1033	99.9	1033	100.0	341	100.0	341	100.0

Table A-10

Home Residences for All Santa Clara Students(1959) and Santa Clara Freshmen(1960).

Area of Residence	All Students		Freshmen	
	N	%	N	%
Outside United States.....................	38	3.7	11	3.2
Eastern Cities (Boston to Cincinnati....	4	.4	--	--
Eastern States (outside major cities)...	8	.8	2	.6
Midwest Cities (Chicago to Kansas City).	2	.2	3	.9
Midwestern States (Cities excluded).....	6	.6	3	.9
The South................................	6	.6	1	.3
Northwest (including Northern California)	84	8.1	49	14.3
Southwest U.S. & Central California.....	178	17.2	60	17.6
Southern California......................	196	19.0	61	17.9
San Jose.................................	121	11.7	35	10.2
Santa Clara County (excluding San Jose).	82	7.9	29	8.5
Remainder of Bay Area....................	308	29.8	86	25.2
No data..................................	--	--	1	.3
TOTAL:	1033	100.0	341	99.9

Coefficients of Correlations Between Test Items and Total Test Scores:

INCONSISTENCY SCALE

Item No.	Correl. Coeff.	ITEM
78	.52	It is the primary duty of the teacher to present all his materials with the greatest objectivity possible.
129		History should always be taught in such a way as to emphasize those things which will strengthen students' pride and loyalty to their country.
		* * *
31	.45	All true learning must be specifically Christian in character.
78		It is the primary duty of the teacher to present all his materials with the greatest objectivity possible.
		* * *
3	.44	A professor should show his students the right and true position on any controversial matter.
78		It is the primary duty of the teacher to present all his materials with the greatest objectivity possible.
		* * *
3	.35	A professor should show his students the right and true position on any controversial matter.
132		It is important to remain free from prejudice in any discussion of politics and religion.
		* * *
27	.49	The Bill of Rights is basic to our form of government, and we should resist any attempts to dilute or curtail it.
76		Un-Christian religious services should be allowed in this country only if they take place privately.
		* * *
27	.39	The Bill of Rights is basic to our form of government, and we should resist any attempts to dilute or curtail it.
105		It may be necessary to modify the First and Fifth Amendments, because these have been used so often to protect subversives.

Inconsistency Scale, continued, page 2.

Item No.	Correl. Coeff.	ITEM
58	.56	Since clearly only one religion can be the true one, others are tolerated only because it is at present impractical to try to suppress them.
131		We should oppose all proposals which would make this country less democratic by restricting any of the basic rights which belong to the people.
		* * *
51	.34	It is important that the choice of national leaders be in the hands only of people who possess intelligence, integrity and experience.
131		We should oppose all proposals which would make this country less democratic by restricting any of the basic rights which belong to the people.
		* * *
51	.42	It is important that the choice of national leaders be in the hands only of people who possess intelligence, integrity and experience.
6		A man who is old enough to fight is old enough to vote.
		* * *
6	.38	A man who is old enough to fight is old enough to vote.
82		People who are unwilling or unable to understand politics should not be allowed to take part in elections.
		* * *
6	.35	A man who is old enough to fight is old enough to vote.
127		Teenagers are seldom sufficiently mature to make intelligent or responsible political or economic decisions.
		* * *
4	.53	Religious freedom is very important, and all encroachments on it must be prevented.
58		Since clearly only one religion can be the true one, others are tolerated only because it is at present impractical to try to suppress them.

Inconsistency Scale, continued, page 3.

Item No.	Correl. Coeff.	ITEM
4	.53	Religious freedom is very important, and all encroachments on it must be prevented.
76		Un-Christian religious services should be allowed in this country only if they take place privately.
		* * *
76	.50	Un-Christian religious services should be allowed in this country only if they take place privately.
131		We should oppose all proposals which would make this country less democratic by restricting any of the basic rights which belong to the people.
		* * *
82	.23	People who are unwilling or unable to understand politics should not be allowed to take part in elections.
131		We should oppose all proposals which would make this country less democratic by restricting any of the basic rights which belong to the people.
		* * *
33	.48	Atheistic propaganda is contrary to Christianity, and should not be permitted in a society like ours.
108		Complete freedom of speech and press, subject only to laws against libel and obscenity, is an essential part of our life.
		* * *
8	.37	American Communists should be prevented from advocating their views, since these involve the overthrow of our government.
108		Complete freedom of speech and press, subject only to laws against libel and obscenity, is an essential part of our life.
		* * *
33	.46	Atheistic propaganda is contrary to Christianity, and should not be permitted in a society like ours.
80		No one has the right to tell a responsible adult what he may or may not read.

Inconsistency Scale, continued, page 4.

Item No.	Correl. Coeff.	ITEM
80	.26	No one has the right to tell a responsible adult what he may or may not read.
133		Books on the Index should never be read without permission.
		* * *
30	.35	The American people are level-headed enough to reject, under present circumstances, radical ideologies.
126		Communism could gain a considerable following here if we allowed Russian propaganda in the United States.
		* * *
53	.38	In politics, honesty is the most effective policy.
102		Few men who have risen to the top in politics have kept their hands clean.
		* * *
5	.20	A person who leads a good life, according to his own beliefs, whatever these may be, can attain Heaven.
57		A man who does not believe in God cannot attain salvation.
		* * *
55	.31	The state should give equal support to all schools, public and private.
103		The separation of Church and State should be complete and final.
		* * *
28	.13	We should apply the same code of honesty to our obligations to our country as we do to our obligations to our friends.
81		With taxes so high, it really is all right to misrepresent one's income slightly.
		* * *
12	.32	A man who joins a team foregoes his right to make his own decisions independently of the team.
91		One trouble with politicians is that they often support their party, instead of weighing the issues objectively.

Item No.	Correl. Coeff.	ITEM
91	.42	One trouble with politicians is that they often support their party instead of weighing the issues objectively.
36		Loyalty, whether to one's family, political party, or country, is the highest virtue.
		* * *
36	.45	Loyalty, whether to one's family, political party or country, is the highest virtue.
139		No really good man would have fought in Hitler's army in World War Two.
		* * *
141	.43	Doing good and avoiding evil is an inherent principle of human nature.
85		Some men are devoid of all notion of right and wrong.
		* * *
61	.45	Our primary duty is to contribute to the welfare of others.
116		When a conflict of rights arises, one may always prefer one's own rights to those of others.
		* * *
63	.45	The highest motive for being good is the advantage it can achieve both for society and ourselves.
112		We should ask no reward for being good, but should be good purely for goodness' sake.
		* * *
64	.39	Most of the people who committed atrocities in World War II could not be held responsible because they acted on orders.
16		A man is always guilty who knowingly consents to do a wrong act.

Item No.	Correl. Coeff.	ITEM
16	.22	A man is always guilty who knowingly consents to do a wrong act.
109		A worker may substitute materials which are below specification if he is ordered by his boss to do so.
		* * *
140	.20	The dispute about whether God is one person or three has little real importance for me.
66		Indifference in matters of faith and morals is wrong.
		* * *
66	.23	Indifference in matters of faith and morals is wrong.
11		It makes little difference what you believe, so long as you lead a good life.
		* * *
37	.19	Christians who believe that prayer is valuable actually recover from illness no quicker than atheists or cynics.
110		Prayer can often be more help than medicine in curing the sick.
		* * *
60	.28	The primary purpose of marriage is the procreation of children.
133		Marriage as a process and as an institution has no single dominating purpose; it has a multitude of goals like personal self-expression, companionship, etc.
		* * *
134	.19	A doctor must exhaust all means to preserve human life as long as possible.
38		A physician who allowed an aged and incurable invalid, suffering from an extremely painful disease, to die more quickly through knowing negligence has not really done wrong.
		* * *
38	.10	A physician who allowed an aged and incurable invalid, suffering from an extremely painful disease, to die more quickly through knowing negligence has not really done wrong.
87		Mercy killing is always immoral.

Inconsistency Scale, continued, page 7.

Item No.	Correl. Coeff.	ITEM
14	.33	We should do whatever is medically possible to prevent feebleminded people from having children.
89		Sterilization for the purpose of preventing feeblemindedness can never be justified.
		* * *
41	.32	A man with three children whose wife has left them should be granted a divorce, enabling him to find a suitable mother for his children.
114		Divorce is always wrong.
		* * *
84	.30	A doctor may take steps to terminate the pregnancy of a girl who has been criminally assaulted if he knows that the bearing of a child will result in a severe mental breakdown.
34		An abortion directly induced to save the mother is never permitted.
		* * *
34	.19	An abortion directly induced to save the mother is never permitted.
111		It may sometimes be necessary intentionally to sacrifice the life of an unborn child in order to save the mother.
		* * *
113	.46	Any means must, if necessary, be used to preserve Western civilization from the menace of atheistic communism.
9		The telling of a lie with intent to deceive can never be justified.
		* * *
9	.42	The telling of a lie with intent to deceive can never be justified.
136		Telling a lie to save a life is really morally justifiable.

Inconsistency Scale, continued, page 8.

Item No.	Correl. Coeff.	ITEM
135	.29	A man who creates a great fortune is a better man than one who merely inherits one.
40		Competition in the world of big business is very tough; the most ruthless and unscrupulous operator will often be the most successful.
		* * *
10	.21	There will probably be a third world war within the next twenty years.
88		This generation has better prospects for a long and happy life than any other in the world's history.
		* * *
121	.41	A system under which a people is governed by foreigners cannot be justified, save as a most temporary measure.
22		Colonialism is the best possible form of government for many of the world's more backward areas.
		* * *
22	.25	Colonialism is the best possible form of government for many of the world's more backward areas.
96		All peoples have a right to choose whatever form of government seems to them best suited to their needs, so long as they do not violate the fundamental freedoms of speech and religion.
		* * *
96	.44	All peoples have a right to choose whatever form of government seems to them best suited to their needs, so long as they do not violate the fundamental freedoms of speech and religion.
47		No country should adopt a socialist form of government.
		* * *
47	.62	No country should adopt a socialist form of government.
146		The best economy would be based on "From each according to his ability, to each according to his need."

Inconsistency Scale, continued, page 9.

Item No.	Correl. Coeff.	ITEM
146	.37	The best economy would be based on "From each according to his ability, to each according to his need."
73		Initiative and ability should always be rewarded in any economic system.
		* * *
146	.33	The best economy would be based on "From each according to his ability, to each according to his need."
98		We should return to the principle of rugged individualism which made this country great.
		* * *
98	.21	We should return to the principle of rugged individualism which made this country great.
45		If people abandonned their insatiable search for money this would be a much better country to live in.
		* * *
45	.42	If people abandonned their insatiable search for money, this would be a much better country to live in.
124		What socialism overlooks is that there is no alternative to the profit motive which would keep our economy going.
		* * *
49	.26	The American way of life is specifically Christian.
118		Western man is on the whole unthinking, materialistic and superficial.
		* * *
118	.23	Western man is on the whole unthinking, materialistic and superficial.
70		Americans are generally competent to make their own decisions, to guide their lives in sensible ways.

Inconsistency Scale, continued, page 10.

Item No.	Correl. Coeff.	ITEM
70		Americans are generally competent to make their own decisions, to guide their lives in sensible ways.
	.35	
144		Advertisers and "hidden persuaders" control virtually every decision of most people in this country.
		* * *
145		The right to racial intermarriage is not a necessary element in full racial equality.
	.36	
92		Negroes in the United States should be accepted and treated as complete equals.
		* * *
92		Negroes in the United States should be accepted and treated as complete equals.
	.33	
20		Any group has the right to establish its own conditions of membership.
		* * *
20		Any group has the right to establish its own conditions of membership.
	.32	
69		Segregation in schools, unions and housing is a violation of man's right to equality.
		* * *
69		Segregation in schools, unions and housing is a violation of man's right to equality.
	.37	
123		There would be no injustice in separate schools for white and colored children if only the facilities and instructions were really of equal quality.
		* * *
69		Segregation in schools, unions and housing is a violation of man's right to equality.
	.38	
50		A community has a right to decide what kinds of people it will permit to move into its own area.

Inconsistency Scale, continued, page 11.

Item No.	Correl. Coeff.	ITEM
18	.38	A person should not interfere with the personal beliefs and attitudes of his neighbors.
97		One who believes in a religion has a duty to promote his faith at every opportunity.
		* * *
117	.40	A sexual pervert is a disgrace to humanity, and should be severely punished.
44		The only time it is right for a judge to inflict pain or unhappiness is when some gain in human welfare is the intended result.
		* * *
44	.18	The only time it is right for a judge to inflict pain or unhappiness is when some gain in human welfare is the intended result.
93		The purpose of punishment is not only to reform the criminal and to deter others from crime, but to exact a penalty comparable to the loss inflicted.
		* * *
19	.39	Homosexuals are entitled to the same justice as anyone else.
72		We should not allow the usual legal protection for individuals who commit appalling crimes such as dope peddling or perversion.
		* * *
21	.29	Owners of a business should be allowed to make all the important decisions about how to run it without any interference from the state.
67		A minimum wage law prevents injustice to the poorest members of society.

Coefficients of Correlations Between Test Items and Total Test Scores:

MORALISTIC PERCEPTION SCALE

Item No.	Correl. Coeff.	ITEM
2	.49	Every good doctor accepts that, even if a patient is unconscious, his chances of recovery are substantially better if his relatives and friends are praying for him.
7	.44	Our historical knowledge of the life of Christ is as complete as available information about most of our great contemporaries.
23	.41	History shows that some races are innately more warlike and aggressive than others.
24	.45	If a truly free election were held in Russia today, there is no question but that the Communists would be thrown out of power.
25	.38	People born into poor or difficult environments have about as much to succeed in life as anyone else, if they apply themselves.
26	.49	It is generally recognized that a civil ceremony of marriage is binding, yet does not make people really married.
29	.21	To say that a country can have an overpopulation problem is absurd; what it actually may have is an under-production problem.
32	.52	The Biblical account of creation provides us with the clearest evidence that Darwin's theory of evolution is wrong.
42	.27	Presentation of any course in history or the social sciences will differ considerably between a Catholic and a state university.
46	.49	The economic, social and political problems of the world would be solved if men would appeal to the principles of right and wrong.
48	.41	Our only hope for China is to have faith that Chiang Kai Shek will eventually reconquer the mainland.
52	.39	Theology, the study of God, is a science in the same way as physics or biology is.
54	.40	Artificial birth-control, used on a wide scale, could never cure a so-called over-population problem.
56	.41	The divinity of Christ is as historically demonstrable as the existence of Julius Caesar.

Moralistic Perception Scale, continued, page 2.

Item No.	Correl. Coeff.	ITEM
68	.45	Most trade union officials are thoroughly corrupt.
71	.41	Socialized medicine means that doctors virtually become robots.
74	.42	Nudist colonies are a real threat to the moral life of a nation.
77	.49	A greater emphasis on moral and religious instruction in all schools is the only effective answer to juvenile delinquency.
83	.36	Religious instruction was removed from the state school system as a result of pressures exerted by the forces of secularism.
93	.48	The only real reason people are pacifists is so they can avoid the dangers and discomforts of military life.
94	.38	Every genuine Catholic believes that every time the Pope says something, it must be true.
99	.47	The behavior-patterns of different racial groups are to be explained by innate, hereditary differences, rather than in terms of different social environments.
100	.26	While one certainly need not accept any Communist ideas, one should realize that there is no evidence that the American Communist Party would ever participate in any illegal activities.
101	.39	Immortality is a scientific fact.
104	.51	That the Pope is infallible could be proven by reason alone.
106	.53	It is time we ceased being polite, and realized that people who deny Eternal Truths should rightly be called Liars.
107	.39	The Hindu belief that the cow is sacred would be quickly dispelled if the Hindus were educated.
119	.29	Catholic politicians naturally depend on Church rules and directives when making important political decisions.
122	.43	It is no longer possible to doubt that Roosevelt's New Deal was the only policy which could have brought us out of the depression.
125	.31	Negroes outnumber whites in many Southern states.
128	.57	The only real reason why people become atheists or agnostics is that then they can live for immediate pleasures, unhampered by any code of morality.

Moralistic Perception Scale, continued, page 3.

Item No.	Correl. Coeff.	ITEM
130	.43	Only church marriages can be truly happy and successful.
143	.49	The increased number of lynchings in recent years shows that Southern racial prejudices are growing more bitter.
144	.43	Advertisers and "hidden persuaders" control virtually every decision of most people in this country.
149	.31	Progressive educators would like to see the family virtually excluded from the upbringing of children.

Coefficients of Correlations Between Test Items and Total Test Scores:

BROAD DEVIATION SCALE

Item No.	Correl. Coeff.	ITEM
9	.39	The telling of a lie with intent to deceive can never be justified.
11	.47	It makes little difference what you believe, so long as you lead a good life.
14	.59	We should do whatever is medically possible to prevent feebleminded people from having children.
34	.59	An abortion directly induced to save the mother is never permitted.
38	.36	A physician who allowed an aged and incurable invalid, suffering from an extremely painful disease, to die more quickly through knowing negligence has not really done wrong.
41	.69	A man with three children whose wife has left them should be granted a divorce, enabling him to find a suitable mother for his children.
59	.49	It is a fundamental truth that the end does not justify the means.
60	.48	The primary purpose of marriage is the procreation of children.
63	.54	The highest motive for being good is the advantage it can achieve both for society and ourselves.
66	.40	Indifference in matters of faith and morals is wrong.
87	.48	Mercy killing is always immoral.
89	.50	Sterilization for the purpose of preventing feeblemindedness can never be justified.
111	.52	It may sometimes be necessary intentionally to sacrifice the life of an unborn child in order to save the mother.
113	.39	Any means must, if necessary, be used to preserve Western civilization from the menace of atheistic communism.
115	.55	The only reliable way to judge whether a certain action is good or bad is to consider the consequences.

Broad Deviation Scale, continued, page 2.

Item No.	Correl. Coeff.	ITEM
136	.61	Telling a lie to save a life is really morally justifiable.
138	.53	Marriage as a process and as an institution has no single dominating purpose; it has a multitude of goals like personal self-expression, companionship, etc.
140	.53	The dispute about whether God is one person or three has little real importance for me.

Coefficients of Correlations Between Test Items and Total Test Scores:

NARROW DEVIATION SCALE

Item No.	Correl. Coeff.	ITEM
13	.54	Married couples have an obligation to have as many children as possible.
35	.64	With regard to intoxicating liquor, complete abstention is the ideal, though drinking in moderation is the best that most people seem able to manage.
39	.65	Appropriating the property of another without his consent can never be justified.
62	.62	The practice of cremation violates natural law.
65	.00	Even though most people may do it, kissing on a date is immoral.
134	.71	A doctor must exhaust all means to preserve human life as long as possible.
137	.61	Acts done purely to give oneself physical pleasure are unworthy of a really good man.

Coefficients of Correlations Between Test Items and Total Test Scores:

RIGHTS AND LIBERTIES SCALE

Item No.	Correl. Coeff.	ITEM
4	.19	Religious freedom is very important, and all encroachments on it must be prevented.
8	.55	American Communists should be prevented from advocating their views, since these involve the overthrow of our government.
27	.23	The Bill of Rights is basic to our form of government, and we should resist any attempts to dilute or curtail it.
33	.63	Atheistic propaganda is contrary to Christianity, and should not be permitted in a society like ours.
51	.59	It is important that the choice of national leaders be in the hands only of people who possess intelligence, integrity and experience.
58	.47	Since clearly only one religion can be the true one, others are tolerated only because it is at present impractical to try to suppress them.
76	.46	Un-Christian religious services should be allowed in this country only if they take place privately.
82	.45	People who are unwilling or unable to understand politics should not be allowed to take part in elections.
105	.56	It may be necessary to modify the First and Fifth Amendments because these have been used so often to protect subversives.
108	.29	Complete freedom of speech and press, subject only to laws against libel and obscenity, is an essential part of our life.
126	.53	Communism could gain a considerable following here if we allowed Russian propaganda in the United States.
131	.40	We should oppose all proposals which would make this country less democratic by restricting any of the basic rights which belong to the people.

Coefficients of Correlations Between Test Items and Total Test Scores:

SEGREGATION SCALE

Item No.	Correl. Coeff.	ITEM
20	.50	Any group has a right to establish its own conditions of membership.
43	.62	Negroes could solve their social problems by not being so irresponsible, lazy and ignorant.
50	.69	A community has a right to decide what kinds of people it will permit to move into its own area.
69	.51	Segregation in schools, unions and housing is a violation of man's right to equality.
92	.58	Negroes in the United States should be accepted and treated as complete equals.
123	.71	There would be no injustice in separate schools for white and colored children if only the facilities and instruction were really of equal quality.
145	.58	The right to racial intermarriage is not a necessary element in full racial equality.
150	.03	Only a prejudiced person would suggest the habits and attitudes of various ethnic minority groups in the U.S. are really different.

Coefficients of Correlations Between Test Items and Total Test Scores:

CONSERVATISM SCALE

Item No.	Correl. Coeff.	ITEM
17	.46	A good officer will always be somewhat apart from his men, and to some extent feared by them; this is the basis of discipline and respect.
21	.43	Owners of a business should be allowed to make all the important decisions about how to run it without any interference from the state.
47	.45	No country should adopt a socialist form of government.
67	.29	A minimum wage law prevents injustice to the poorest members of society.
73	.40	Initiative and ability should always be rewarded in any economic system.
75	.48	Important changes must be brought about gradually; and wherever possible should fit in with established ways and traditions.
98	.51	We should return to the principle of rugged individualism which made this country great.
124	.53	What Socialism overlooks is that there is no alternative to the profit motive which would keep our economy going.
142	.43	War tends to bring out the finest qualities in men.
146	.23	The best economy would be based on "from each according to his ability, to each according to his need".
148	.44	A good deal of unhappiness and injustice is inevitable in this world.

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